THE ENGINEERING AND MINING JOURNAL.

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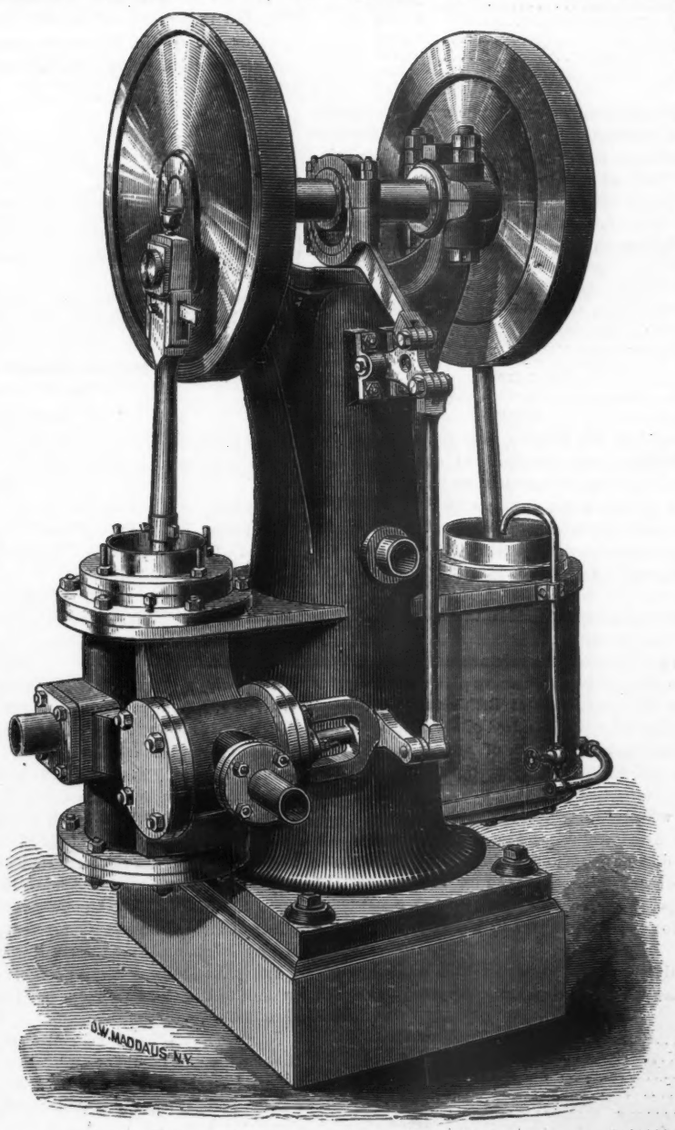
Improved Air Compressors.

AMONG the most interesting features of the machine department of the American Institute Fair, now open in this city, are the air compressors of the COMPRESSED AIR POWER COMPANY. These machines, though constructed under the original Royce patents, embody the improvements of ERICSSON, REYNOLDS and FISH, and other engineers, and are built by the DELAMATER IRON WORKS of this city, which is sufficient guarantee that the work in them is of the best description.

On page 33 of the present volume we illustrated and described a large compressor, built for the COMPRESSED AIR POWER COMPANY, by the DELAMATER IRON WORKS. It had cylinders 20x24 inches, and was capable of furnishing 25 to 50 horse-power. As many quarries and mines use but one or two drills at a time, a smaller and less expensive form of compressor was called for and we now illustrate one admirably adapted to this purpose. Nothing could be simpler, or combine more effectually the prime requisits of a useful practical machine for compactness, simplicity, and strength, than does this little compressor. Standing on a base 2x4 feet, we have a hollow cast iron column 12 in. dia. by 48 in. long, which forms at the same time a support for the main crank shaft and a receiver or reservoir for the compressed air; on the side of this receiver are cast the steam cylinder and the tank in which is placed the compressor cylinder. The machine is single acting, the steam engine being a trunk cylinder 10x12 in.; the trunk being 7 in. diameter, the annular space around it admits sufficient steam to raise the piston of the compressor when drawing air in, while the full area of the cylinder is available in the down stroke compressing the air. The rotary valve is worked from an eccentric on the crank shaft through a rocker attached to the supporting column, as shown in the drawing. The compressor cylinder is inserted in the water tank shown on the right of the engraving, and the compressor piston is a trunk which is kept partly filled with cold water, from the small pipe shown in the drawing. As the piston rises on the return stroke, the water in it escapes into the tank through openings in the upper part of the cylinder, and is replaced on the down stroke by fresh water; the cylinder itself is cooled from the outside by the water surrounding it in the tank. The heat thus given off by the air may be utilized for heating the feed water for the boilers. The packing on the trunk consists of two leather rings which are held out against the smooth sides of the cylinder—one, on the up stroke, by the pressure of water in the trunk, the other, on the down stroke, by the pressure of air in the compressor. All the fittings of the engine are of brass (gun metal), the connecting rods turned bright, and the crank wheels are also turned, so that the engine is not only exceedingly simple, compact and strong, but it is also quite ornamental.



The adoption of the trunk system for the steam and air cylinders reduces greatly the height, while maintaining the full length of connecting rod, and obviating the use of guides. The object of using the trunk in the air compressor is that it may act as guide. The total weight of this machine, complete, is about one ton; it is of two to five horse-power according to the pressure at which it is used, and will supply two rock drills. It costs $1000.

This is just what is wanted in a great many of our quarries and mines, and it will not only greatly promote the more general use of compressed air, but it will facilitate the introduction of rock drilling machines, which are destined to play a much more important part in mining in the future than they have done in the past.

The practice of using steam boilers underground has caused the loss of millions of dollars in our coal mines, for, no matter how safe they apparently are made, from some "accident" they generally end by setting the mine on fire. And even where they do not, or where steam is brought in from the surface through pipes, besides the considerable condensation that takes place, there are grave objections to its use in a mine; it makes a warm damp atmosphere which is very destructive to timber, and it tends to decompose and to produce falls of roof in certain kinds of rock. Compressed air, on the contrary, is perfectly safe, and adds to the ventilation at the face of the work a large amount of pure, dry, cold air, which is especially desirable in very deep and poorly ventilated mines. The compressors generally in use in Europe and, till recently, in this country, have been complicated and costly, and so simple, effective, and inexpensive a machine as that we are describing, cannot but find a very extended application in every part of the country.

The subject of the transmission of power by compressed air is one of great interest and practical importance to our mining and manufacturing industries, and we shall return to the subject on another occasion, when our space will permit us to discuss the very important results obtained in experiments made by Mr. HORACE H. DAY, at Bloomingdale, N. J., the experiments made in the Hoosac Tunnel and elsewhere. Mr. DAY has long advocated the transmission of the power of Niagara to Buffalo (20 miles) by means of this medium, and his abundant means place the success of this project within his reach. Among those now using these compressors are

WITHERBEE, SHERMAN and Co., at Port Henry, N. Y.; J. H. RAMSEY Esq., Howe's Cove, N. Y.; Lincoln Mine, "Little Creek," Cal.; MCCORMICK and Co., Harrisburg, Pa.; Sutherland Falls Marble Co., Sutherland Falls, Vt., etc. These compressors vary in capacity from two-horse power upwards, and a number of sizes are constantly kept in stock. For further particulars apply to HORACE H. DAY, Esq., General Agent for THE COMPRESSED AIR POWER CO., 5 Park Place, New York, or the DELAMATER IRON WORKS, foot of West Thirteenth street, New York.

Process of Spelter Production, as Practised at Carondelet, Missouri, with Comparisons.*

By JNO. W. PACK.

CONCLUDED FROM PAGE 226.

RETORTS.

IN the manufacture of retorts and receivers this clay is mixed with one-half of its weight of ground chamotte from old retorts. The chamotte, with some adhering scoria, or residue, shows the following centessimal composition:

Silica	84.3610
Alumina	5.4336
Lime	3.4585
Sulphur	0.8560
Iron	2.2774
Lead	0.1510
Copper	trace.
Zinc	4.1516
Arsenic	0.4348
Antimony	0.9488
	101.0727

On the supposition that this analysis is a fair representation of the tempering material incorporated with the clay, and that the adhering residue is detached as much as possible, (which should be the case,) the composition of the baked retorts, used at the works of the Martindale Zinc Company, may be approximately calculated. The result of the calculation is given below, together with the composition of the retorts used at the Lehigh Zinc Works, as determined by my own analysis from full-sized specimens in the technical collection of the school:

	Martindale retort.	Lehigh retort.
Silicic acid	72.009	72.175
Alumina	26.166	22.977
Ferric oxide	.820	1.883
Lime	2.422	1.602
Magnesia	trace.	.685
Alkalies	not est.	not est.

The retorts are of the usual form used in the Belgian process; they are four feet in length, by six and one-half inches interior and nine and one-half inches exterior diameter. The furnaces for containing the retorts are built in blocks of either two or four. The capacity of the single furnaces at the Martindale Works varies from eighty to eighty-eight retorts. Those at the Missouri Works contain seventy-four. There are eight furnaces in operation at the former establishment, and six at the latter, giving a joint capacity of upwards of eleven hundred retorts.

The Lehigh furnaces hold each fifty-six retorts, besides the so-called "cannons" for breaking the heat in the lower row.

The retorts are charged each with forty pounds of a mixture consisting of two-thirds ore and one-third slack, having the composition above given. This charge does not differ materially in quantity from that used at Bethlehem, though the proportions of the ingredients at the latter are one hundred of ore to forty of anthracite dust. When we consider the higher percentage of ash in the Illinois slack over that in the Pennsylvania anthracite, the proportions are not essentially different.

WORKING.

The method of working offers no novel features, and therefore requires no special description. A retort lasts, on an average, about two weeks, or through twenty-eight charges. The upper row of retorts is reserved for the treatment of zinc dust, drippings, and skimmings. This mixture thus treated consists of about one-fourth dust and three-fourths drippings and skimmings, besides various impurities.

The dust used at Bethlehem contains from 60 to 65 per cent. metallic zinc, while that produced at Martindale has 75.899 per cent. metallic zinc, and shows the following composition:

Sulphur	0.026
Silica and insoluble matter	9.608
Carbon	1.221
Iron	2.052
Lead	trace.
Copper	trace.
Arsenic	0.321
Antimony	0.372
Oxide zinc	57.740
Zinc	29.548

(Total per cent. metallic zinc, 75.899.)

SPELTER.

It is admitted that, other things being equal, the calamine ores should produce a better metal than those containing a preponderance of blende. Counterbalancing in some measure the excellent properties of the Missouri ores, consequent on the presence of so large a proportion of calamine, we have the presence of arsenic in the minerals from both sections of the State, and of notable amounts of antimony in those from the southeastern mines. These metals are present in the spelter, as will be seen in the table of results of analyses I have made of three samples of the commercial spelter. As far as the Carondelet zinc is concerned, it bears distinctly the impression of the ores from which it is made.

The spelter from the establishment of the Missouri Company's works, where the southeastern ores are more largely used, contains antimony, while the metal produced at the Martindale works, where the Granby and Joplin ores are chiefly used, is free from it. The physical properties of the two metals vary notably. While the last named resembles the general run of commercial zinc, that from the Missouri works is whiter in color, hard and highly sonorous; features, which it is claimed, create a demand and establish a higher market price for this spelter. Appreciable amounts of lead and copper are found in the metal from both works. Iron is also present, but not in injurious amounts.

The sulphur was determined by passing the gas, evolved by dissolving the metal in chlorhydric acid, through a solution of acetate of lead, and treating the precipitated sulphide of lead in the manner commonly adopted in the estimation of sulphur in cast iron. The arsenic and antimonic hydrides evolved were decomposed and fixed by a solution of argentic nitrate.

No. I. is the analysis of the Missouri Zinc Company's spelter; No. II. of the Martindale spelter; and No. III. of a specimen of Lehigh spelter. From what character of ore No. III. was prepared I am not able to state. Nos. IV. and V. are older analyses of spelter (by PLATTNER) from Silesian and Chinese specimens respectively.

	I.	II.	III.	IV.	V.
Sulphur	.0035	.0741	.0020	....	....
Silica	.1346	.1374	.2410	....	....
Carbon	.1775	.0006	.2322	.0036 to .75	....
Iron	.7173	.2863	1.0342	.28 to .32	1.5
Lead	.0701	.0061	.1094	.47 to .15	.8
Copper	.1123	.0018	.0888	....	....
Arsenic	.0603	.0590	.0806	....	....
Antimony	.0249	.0000	.0000	....	....
Cadmium	....	....	....	.97	....
Impurities	1.3005	.56277	1.7882	....	....
Zinc	98.6995	99.43723	98.2118	....	....

* A paper read before the American Institute of Mining Engineers at the St. Louis meeting, May, 1874.

Extracts from a Report on Panamint Mining District.

By C. A. STETEFELDT, M. E.

GEOGRAPHICAL POSITION.

The Panamint Mining District is located on the west slope of the Panamint range of mountains, in Inyo Co., Cal.

THE ROAD.

The road by which the mines are, at present, reached, takes its starting point from Indian Wells, situated on the east slope of the Sierra Nevada, not far from Walker's Pass, a station on the road from Los Angeles to Cerro Gordo, 165 miles distant from Los Angeles.

Panamint is northeast of Indian Wells, a distance of 70 miles by the present wagon road, which has to cross three valleys and three low ranges of mountains between Indian Wells and Panamint.

TOPOGRAPHY.

The Panamint range has a general course of North 20° West and South 20° East, and is, both in altitude and extent, the most prominent one in this neighborhood, its highest peaks reaching an elevation of about 10,000 feet above the level of the sea; hence it attracts the clouds from the surrounding country, and is subject to heavy rains and cloud-bursts. On its east slope is Death Valley, which, according to WILLIAMSON'S observations, is considerably below the level of the sea. Observations taken on the road from Indian Wells show, that the descent of the valleys east of the Sierra Nevada is gradual, and terminates finally in Death Valley. In the immediate vicinity of the highest peaks, on the west slope of the range, are the cañons in which Panamint District is located. Of these, Surprise Cañon is the most interesting and prominent, containing the best mines of the district and the town-site of Panamint. South of Surprise Cañon is Happy Cañon, and to the north Narboe Cañon.

Panamint Range is of considerable width in this vicinity, the distance from its summit to Panamint Valley being 8½ miles, and to Death Valley, as I am informed, 18 miles.

Surprise Cañon has a general course of North 70° East bending, however, to the northeast at its upper end. In ascending this remarkable cañon one is surprised indeed; such steep, bold, and barren mountains, intersected by deep gulches; such a variety of rocks such grand traces of the work of the unfettered elements! I can only compare it with a chart of the moon, and conceive that such must have been the aspect of the whole of our earth in its earliest state. Neither grass nor soil cover these corroded mountain sides, and only a few huge cactus have fastened their roots to the rocks. The bottom of the cañon is formed of coarse gravel and great bowlders, some of the latter having been washed down from the very summit of the range. Unusually heavy storms have, again, from time to time, torn this young and gradually formed conglomerate and swept it further onward, cutting perpendicular channels ten and twelve feet deep.

Several springs make their appearance, the first one two miles from the mouth of the cañon. The cañon here becomes narrower, but more friendly. Luxuriant

vines cover the rocks; wherever the soil is moist there are copses of willows, and occasionally a small pine tree springs from a cleft in the rocks. Six miles from the mouth of the cañon we reach the town site of Panamint, laid out on most dangerous ground, in the immediate neighborhood of the mines, and about 6000 feet above the level of the sea, or about 4700 feet above Panamint Valley. Here the cañon is again wider, and two miles further up it is barred by the summit, dividing it into a north and east fork.

The gulches which intersect the mountain sides at oblique angles with Surprise Cañon, commencing below the town-site of Panamint, are named respectively: on the north slope: Woodpecker, Jacob's Wonder, Stewart's Wonder, Sourdough; on the south slope: Cannon, Marvel, Little Chief, Stern. The ridges on either side of Surprise Cañon near its end rise to an altitude of about 7500 to 8700 feet above the level of the sea. These gulches are well timbered, the trees being nut, pine and cedar.

NATURAL RESOURCES.

Although the district lies in a barren country, and is rather difficult of access, yet its natural advantages in regard to wood, water, and salt are excellent.

GEOLOGY.

The geological features of the Panamint range are exceedingly grand and interesting, and to do full justice to the subject would require a long study. I shall give, therefore, only such outlines as have an important bearing upon the formation of the mineral deposits, and for this purpose I shall confine myself to the geology of Surprise Cañon alone. Of course I lay no claim to great exactness for the reason given above.

Surprise Cañon, from its mouth to the summit of Panamint range, presents a succession of sedimentary metamorphic rocks, elevated, disturbed and transformed by a series of eruptive rocks at various intervals. For two miles from the mouth of the cañon we find a formation of dark colored mica slates, alternating with quartzitic slates, with little patches of limestone here and there on the top of the ridges. In proceeding further, we find this slate traversed by dykes of greisen. Greisen is a rock of very rare occurrence, and consists of white crystalline quartz and white lithion mica. Its eruptive nature, which has been doubted by some geologists, becomes here very evident. This rock becomes soon predominant and forms an immense mass, which I estimate to be about half a mile in width. Here, owing to the extreme hardness of the rock, the cañon is very narrow, in places just wide enough for the road. The greisen itself is again perforated by dykes of diorite, and where the greisen ends we find a more extensive eruption of diorite, which encloses a small formation of crystalline limestone. Then we meet a formation of light colored, highly metamorphized quartzitic slates (with mica) which have altogether lost their stratification, traversed by dykes of diorite. This is followed by white crystalline limestone of about 1000 to 1500 feet in thickness, also containing diorite dykes. Then, again, dark colored metamorphic quartzitic slates with mica, and horn-blende slates, cut by diorite and diabase dykes, occur for a mile and a half. These carry more or less limestone on the mountain ridges.

By this time we have reached the last two miles of the cañon, which here intersects that part of the formation which interests us most, namely, the mineral belt. The latter consists mainly of a bluish crystalline limestone, alternating with dark colored limestone and calcareous quartzitic and mica slates. Finally the chain is closed by an enormous eruption of a porphyritic trachyte.

In reviewing this grand formation, we arrive at the following conclusions in regard to the geology of Surprise Cañon. We recognize two great centers of eruption and elevation. The first and older is by the greisen, which upheaved and broke the sedimentary rocks, followed by eruptions of diorite, which did their share in metamorphizing the sedimentary rocks. The second and more recent one by the porphyritic trachyte, which elevated the whole range to its present height, and, undoubtedly, was the cause of the formation of the mineral belt which leans against this rock.

It is also evident that Surprise Cañon is of eruptive origin, that is, a fissure riven in the mountain. The numerous dykes of diorite, which traverse the sedimentary rocks, are rarely found to intersect both sides of the cañon, but are mostly found either on one side or the other, which would be unaccountable, if the channel of the cañon had been formed by the action of water.

THE MINERAL BELT.

The mineral belt of Panamint District extends from West to East two to two and a half miles, and from North to South about five miles. On the north slope of Surprise Cañon, where the formation is more regular, it consists of the following succession of rocks: hornblende slate; crystalline bluish limestone; dark colored limestone, calcareous slate, quartzitic slate, and mica slate; dyke of diorite or diabase; white marble; dark slates; limestone; and then the enormous eruption of the trachyte. This rock is composed of large crystals of sanidine in a flesh-colored feldspathic ground mass, enclosing occasionally crystals of hornblende, and dark mica.

FORM OF OCCURRENCE OF ORE.

While in nearly all the limestone districts of Southeast Nevada, as, for instance, in Cortez, Mineral Hill, Eureka, Reveille, and White Pine, the ore occurs in the form of irregular aggregations, no matter if they are defined or not to a certain extent by some wall, or in the form of impregnations in the limestone—as is often the case in White Pine—Panamint District carries its ore in the much desired shape of veins, or to use the common pleonastic expression, in true fissure veins. I pronounce them veins, for the following reasons:

1. Their croppings can be traced without interruption for long distances,

2. There is a well defined system of parallel fissures.

3. These fissures not only traverse the limestone, but continue through the slate.

4. They intersect the country rock independent of the strike and dip of its stratification.

5. The ore is entirely confined to the gangue between the walls of the veins. In no instance did I find even a trace of ore in the limestone. Those who are familiar with the above-named districts in Nevada, will remember how the limestone teemed with little croppings, and bunches of ore of most irregular shape.

VEIN SYSTEMS.

We recognize in Panamint District one main system of veins, which strike East of North, with a very steep dip West of North, to which belong nearly all the prominent ledges, and then a subordinate system, the veins of which strike West of North, and dip East of North. Examples of the first system are the Wonder, Marvel, and Hudson River; of the second, the Esperanza, and War Eagle. In comparing the strike of the different veins of the main system, there seems to be at first sight great confusion and irregularity; but these disappear at once, as soon as we take into consideration their relative position in the mineral belt. The fissures of the main system do not run in straight lines, but in curves. At the extreme west end of the belt, they have a course of about North 22° East. Proceeding further east they swing more and more East of North, reaching nearly due East and finally sway back to a northeast course. Keeping this in mind we ought to be rather astonished at the great regularity of the system.

TO BE CONTINUED.

Engineering Two Thousand Years Ago.

PERHAPS some of the most remarkable remains of ancient engineering are those which were discovered by excavations made some ten or twelve years since, a short distance from Rome, and near the ruins of the ancient city of Alatri. This city was surrounded by massive walls, and located on a mountain or elevated point, and ill provided with water. About 150 years before Christ, as we learn from a Roman inscription, an immense aqueduct was built to bring water from a neighboring mountain better supplied with that element. We are furthermore told that this aqueduct was 340 feet high, supported upon arches and provided with strong pipes. The topography of the country, moreover, assures us that the water supply could not have been conducted into the city, even over such high supports, except by pipes—an inverted syphon—the lowest point of which must have been some 340 feet below the point of delivery, or under a pressure of at least ten atmospheres.

The excavations already alluded to show that the aqueduct must have been of large size, as the piers of the arches are not less than 5 feet 9 inches in breadth, while the total length of the syphon must have been between four and five miles. The question naturally arises—How, and of what material, was this syphon built? As iron pipes of large dimensions, if of any dimensions at all, were not known at that era, we can look only to masonry or woodwork for the material of such construction. Possibly a clue has been found to the mode of their construction by a subsequent discovery, near the same locality, of a field, supposed to have been the site of an ancient parade ground near this once walled city of Alatri. A complete system of underground drainage has been revealed at a depth of about 7 feet below the surface of the field, effected by a well constructed system of pipes made of fire-clay, each about 18 inches in diameter. It is possible that such a pipe, of larger dimensions, and strengthened on its exterior by a strong and massive bulwark of masonry, may have been the means of conveying the water into the city. But however that end might have been attained, the work was certainly a most wonderful feat of engineering, considering the condition of the mechanic arts of that early day. The excavations and discoveries thus brought to light, and so fully confirming the truth of the ancient inscription, were conducted by order of the present Pope, and under the immediate supervision of the well-known Italian scientist, Father Secchi.

Lignite from Louisiana.

BROWN coal, of which there are considerable deposits on the banks of the Mississippi river, about two miles below Shreveport, in Louisiana, has been recently proposed as fuel for the steamboats on the rivers. Analyses of air-dried specimens representing these deposits have yielded the following average results:

Water	15·26
Volatile matter (bituminous)	41·30
Fixed carbon (coke)	37·55
Sulphur (merest traces)	—
Ash	5·89
	10.000

This lignite has a specific gravity of 1·143, it is nearly black in color, and its ligneous structure is not so distinct as usual, but it dissolves completely in caustic soda solution.—*Chemical News.*

Engineers are now engaged in running the lines for the New River Railroad to its junction with the Greenbrier, at Hinton, West Virginia. It will be remembered that this road will run from a point near New River bridge, on the Virginia and Tennessee railroad down the New River Valley to the Chesapeake and Ohio railroad, near Hinton. This will open up a country rich in coal and timber, and it is claimed some of the best farming land in the state that has been lying locked up along the New River will now be accessible to the markets.

THE ENGINEERING AND MINING JOURNAL.

NEW YORK, SATURDAY, OCTOBER 17, 1874.

ROSSITER W. RAYMOND, Ph. D., Editor.
RICHARD P. ROTHWELL, C. E., M. E.,
Editor of the Coal and Iron Department.

The Engineering and Mining Journal is devoted to Mining, Metallurgy and Engineering. Communications on these subjects will always be welcome.

It is the Official Organ of the American Institute of Mining Engineers, and it alone publishes the valuable papers read before that influential society.

Correspondence and general communications and books for review should be addressed to the Editors. Business communications should be addressed to the Secretary.

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THE following programme has been arranged for the meeting of the Institute of Mining Engineers, at Hazleton, on the 27th inst.

OCT. 27.—Arrive at Hazleton at 1 P. M. Dinner. Visit to the coal mines and machine shops. Evening Session, for the communication of papers, &c., at Hazle Hall.

OCT. 28.—Leave Hazleton by train for Jeddo, Drifton, (carriages to Upper Lehigh.) Dinner at Drifton. Visit to Ebervale, Harleigh, Latimore, Milneville and Prospect Rock, returning to Hazleton in the evening. Meeting at Hazle Hall.

OCT. 29.—Visit to the neighborhood of Hazleton, or meeting; cars to Mauch Chunk. Trip by Switchback to Old Lehigh Company's mine, through the Nesquehoning Tunnel to Jegging House, thence to Mauch Chunk. Evening meeting.

OCT. 30.—Visit to Hockendauqua furnaces and iron mines; Bethlehem steel works. Adjournment.

LOCAL COMMITTEE.

THOS. S. MCNAIR, of Hazleton, *Chairman.*
WM. E. HARRIS, of Ebervale, *Secretary.*
ECKLEY B. COXE, of Drifton.

"Superior Skill" in the Iron Business.

THE *Bulletin of the Iron and Steel Association* is usually a very fair and dignified paper, but in its last number it commits a gross breach of these very desirable qualities in endeavoring to make the American Institute of Mining Engineers responsible for the editorial utterances of the ENGINEERING AND MINING JOURNAL. As the Editor of the *Bulletin* knows perfectly well, the Institute of Mining Engineers neither owns nor controls this journal, and is in no way responsible for our views on the iron trade, or on anything else. This is the official organ in so far as it alone publishes all the papers read before the Institute, and publishes its "Official Bulletin" for the instruction of members.

We trust our contemporary will make the proper correction.

The *Bulletin* has one of its intermitting spasms of anxiety for the wages of workingmen. They recur before elections and before the agitation of the tariff question in Congress, and disappear when these inciting causes are past. When we said "wages must be reduced in every branch of manufacture," we advocated a move which has been adopted with the approval of the *Bulletin*. So far as the common laborers are concerned, their wages have been reduced, and that to a point, in some cases, considerably below what is desirable; but we have heard of very few cases where the managing directors, superintendents, and higher priced employees have had their salaries cut down in the same proportion as the wages of the men. We believe in, and shall always maintain, the right of the workman to a fair reward for his labor. We altogether oppose the reduction of wages to "starvation point;" we were going to quote the *Bulletin* and say "to the European standard," but we find that many classes of labor are now even better paid in England than they are here.

We find the following note in the last number of our contemporary:

"The Pennsylvania Steel Company have just relined their two converters after a run of 5276 heats on the old lining, having made the entire product of the last eleven months without relining. This extraordinary result is partly due to the possession by the Company of a fine deposit of refractory stone near their works, commonly known as ganister, and partly to superior skill in manipulating the stone and its mixture. Mr. GEORGE C. BENT is the superintendent of the converting department of the works."

Now we have here the very text from which we have been preaching, the admission of nearly all we claim. Why can the PENNSYLVANIA STEEL COMPANY obtain 5276 heats without relining the converter? The *Bulletin* answers, "partly BY SUPERIOR SKILL." Why do our American Bessemer works produce from 25 to 40 per cent. more metal with the same plant than do the English works? Because of the *superior skill* of our HOLLEY'S and FRITZ'S. Why do the Isabella, the Dunbar, and other furnaces produce 25 per cent. more iron than would have been considered good work some years ago? the answer is always the same, "superior skill." Why can DISSTON sell his saws in England? Why does CARR send his pumps to Germany? Why are we now sending machine tools for locomotive shops to the very cradle of locomotive building in England? Why are our locomotives sent to Russia? *Superior skill* is the constant answer. Superior skill is what we want more than increased protection. This will prevent the ill-advised location and disgraceful mismanagement that characterize some of our works.

When our iron-masters, and the stockholders of our companies, become fully alive to the value of this source of economy in the manufacture of iron, we will have fewer works managed by men who have neither theoretical nor practical knowledge of the business they are put to direct. A large reduction in the labor item of the cost of iron can and will certainly be made, but it is by reducing the amount of labor entering into the ton of iron, rather than by a reduction of the wages paid to the individual workman. The secret of the more economical production of iron elsewhere, as at Harrisburgh, is "*superior skill.*"

The Use of Steam in Extinguishing Mine Fires.

STEAM is now being applied to the extinction of fires in the mines near Wilkes-Barre, Pa., and, it is supposed, with success. It is interesting to know what has been done already in this way, and the opinion of those who have tried it. In the "*Bulletin de la Société de l'Industrie Minérale, T.* IV.," we have a description of a fire which broke out in the St. Matthew Pit at St. Etienne, France, in April, 1857. All openings leading to the fire were closed as far as possible without closing the mine altogether, for during eight days search was being made for the bodies of the nine men burned. At the expiration of that time, the pits being closed, steam from two boilers was admitted for 70 hours at a pressure of about 22 pounds. After this a jet of cold water was thrown on the heated sides of the shaft, and a current of air was drawn through the upcast shaft. The men were enabled to enter the mine, but after two days the fire broke out again, and it became necessary to close the pits. Steam was blown in during 42 hours, then water was again pumped in 12 hours, and the men were again able to enter the mine, but were soon driven out by the fire breaking out afresh. Steam was again admitted for 11 hours and cold water pumped in as before. After this it was possible to enter the mine and the fire was extinguished by throwing water on it.

The steam appears to act beneficially, first in driving out the air, and consequently the oxygen, which supports the fire, and then, when it comes in contact with the ignited coal, it quickly cools off the surface. Since it can only act on the surface, it is evident the interior of the heated mass can cool but very slowly, so that either the admission of steam must be continued for a considerable time, or else, after it has cooled off the surface to such a degree as to permit men to work in the mine, the coal can be cooled off by playing water on it from an ordinary fire engine. The steam not only deadens the fire by excluding air, but it condenses the smoke in the works. It is, of course, impossible in most cases, even were it desirable, to so close the mine as to be able to maintain any pressure in the steam, and indeed it would appear advantageous to create a slight draft at the upcast shaft, in order to draw the steam the quicker into contact with the fire.

Steam has one advantage over choke-damp blown in hot, as an extinguisher, in that it more rapidly cools off the surfaces with which it comes in contact. This action would, however, be still more energetic were it possible to fill the mine with carbonic acid gas, previously compressed and cooled, so that in expanding, it would attain a very low temperature, as is to a certain extent the case in some of our patent fire extinguishers, and this would be free from any tendency to decompose the roof or rot the timber, which are serious disadvantages in the use of steam.

Mining Industries of Nova Scotia.

By A. HEATHERINGTON.

TRÜBNER & CO., LONDON, 1874.

WE make some interesting extracts from Mr. HEATHERINGTON'S useful pamphlet. They will be found of value, being reliable figures, compiled with great care by a gentleman thoroughly qualified for the work.

We omit the statistics of the Nova Scotia Coal Trade, having already given our readers that information, see page 199 vol. XVII.

The iron industry has not attained any considerable development in the Pro-

vince thus far; though nearly every variety of iron ore has been found, but the only smelting establishments opened are at Londonderry, Colchester County, and at Clement's Port, Annapolis County, the former now belonging to the Canada Steel Company, and the latter to the Annapolis Iron Works, from which the production was as follows :

Works.	Men.	Ore Mined. Tons.	Ore Smelted. Tons.	Pig Metal. Tons.
Londonderry.....	26	2947	2091	1046
Clement's Port.	16	538	630	180
Total.....	42	3485	2721	1226

Explorations were carried on near Springville, Pictou County, and extensive limonite deposits found ; also at the Indian Reserve, Whycocomagh, at Five Islands, and near Cheverie.

These localities are favorably situated for smelting works, being in the neighborhood of rivers, beds of limestone, and large forests.

The iron industry of the Province is chiefly indebted for its establishment and maintenance to Mr. JOHN LIVESEY, C.E.

LEAD.

Galena is the only Lead ore known to occur in the Province. Attention has been directed to localities in Colchester, Cumberland, and Lunenburg Counties, and Cape Breton, but, as yet, with no definite results. The late Mr. SAMUEL BAWDEN gave a favorable opinion of the Gay's River deposit, where prospecting was revived for a short period during the year.

COPPER.

Ores of Copper have been found in many localities in Nova Scotia proper and Cape Breton, which are fully designated in Professor How's *Mineralogy of Nova Scotia*. In 1873 search was again made in the vicinity of Polson's Lake, but without striking the lode.

TIN.

It is not impossible that before long Tin mining will be added to the paying industries of the Province ; tinstone having been found by the late Mr. BARNES at Tangier, by Mr. Ross at County Harbor, by Mr. CAMPBELL at Shelburne, and by the writer in Lunenburg County.

QUARRIES.

Large deposits of granite, slate, freestone, marble, and gypsum exist throughout the Province, but they are only worked on a very limited scale, and chiefly by Americans. The value of the gypsum, freestone, and grindstones exported in 1873 was respectively £24,000, £7,000, and £5,000.

Zwickl's New Process for the Treatment of Copper Ores.

Patented August 4th, 1874.

COMBINATION DRY AND WET PROCESS FOR THE TREATMENT OF ARGENTIFEROUS, AURIFEROUS, AND OTHER COPPER ORES.

I. The sulphuretted copper ores are smelted, either alone or blended with other ores, in a reverberatory furnace to a matte or regulus, and after the removal of the dross, the matte is treated with from 6 to 10 per cent. of its weight of sulphate of soda, to produce disintegration of the matte to a fine powder after its removal from the furnace, without any mechanical grinding by the well-known method.

II. The powdered matte is to be calcined, or rather oxydized, in a furnace similar to a common roasting furnace, with this difference, that the floor is not made of solid masonry, but of cast-iron plates, or brick tiles, resting on flat laid bricks so as to allow the free circulation of the air under the floor for keeping it cool, and prevent thereby the decomposition of the sulphate of copper after the same is formed. The furnace is divided by a low brick dam into two compartments, the front part near the fire-bridge, and the rear part, of larger size, towards the chimney ; from this rear compartment, preferably, several flues ought to connect with the smoke-stack in order to better spread the flame.

The matte is first charged into the rear compartment, say 3,000 lb., and spread out to lay not over four or five inches high, to be exposed to a moderate flaming fire, by which it will be soon ignited, and burn with a faint blue flame all over. As long as this continues the fire must be kept low, and the whole mass be often stirred. After the blue flame has entirely disappeared, the fire must be slightly increased, so as to maintain a faint cherry-red heat for about two or three hours longer. After that time the charge is drawn out and deposited in proximity to the doors of the front compartment, where it will soon cool down sufficiently to be mixed with water until it has the consistency of stiff mason's mortar, in which state it is left. The rear compartment is, during the preparation of this mass, charged again with disintegrated matte for oxydation.

The moistened mass becomes, after three or four hours, outwardly hard and dry, and has to be stirred up with a copper spade, and the lumps smashed, to be then charged, before being completely dry, into the front compartment.

III. The mass is there brought to a dark cherry heat, slightly more than the former, and kept so for two or three hours, and raked thoroughly and often, to be then drawn out clean. Should at any time the heat increase to a full red heat, or the mass, from too much heat, get sticky or balling together, it must be drawn out at once. The following serves as a guide in this process of oxydation : if a small part taken out shows, after cooling, little olive-green spots, it is not sufficiently long in the furnace, or not heated enough ; if it shows a pale brick color, with a grey dusky tinge, then it is in the required condition ; if it should show a dark brown color, bordering on black, the heat applied was too great, and the mass is then partly roasted dead, so that less copper will be obtained at the following first precipitation, and the treatment with iron solution (to be described below) has to be prolonged.

The oxydized matte is further treated wet in a series of tanks, of which

No. 1 may be made of iron, with fire under it, or of wood, if heated by steam.

No. 2 is placed in front of the former, and below, made of wood, with several plug holes on one side.

No. 3 is in front of and below No. 2. It serves as precipitating tank ; it is made of wood if heated with steam ; of copper, if to be heated with fire.

No. 4 is made of wood, large and shallow; it contains the more or less concentrated solution of sulphate of soda and iron coming after precipitation from tank No. 3.

No. 5, made like the former, containing very diluted solutions of copper, iron and soda sulphates obtained from washing residues, to be used over for the same purpose, or to be concentrated by slow evaporation.

No. 6, made like the former, contains diluted sulphate of iron and copper, deposited here for slow evaporation, and to be used for washing residues containing no sulphate of soda. It is obvious that for tanks Nos. 4, 5, and 6, instead of single large ones, a number of smaller tanks may be used.

IV. The matte drawn from the front compartment is thrown hot into tank No. 2, which was filled previously with water or dilute solution from No. 5, sufficient to cover the matte, when spread and settled, about four times its height. After stirring well and trimming the mass more to the side opposite the plug-holes, and being well settled, the solution is allowed to run down into tank No. 3 through a filter hung below the plug, and acidulated with a few ounces of sulphuric acid.

V. The copper is here precipitated with scrap iron, or iron sponge, in full boiling heat. The residue in tank No. 2 is to be washed once or twice with water, or with liquid from tank No. 5 (this liquid is to be used in preference to water in order to avoid unnecessary increase of its bulk). After the wash-water becomes weak in copper it is to be thrown back into tank No. 5, whence it came.

The precipitation being completed, the remaining liquid is to be drawn hot from the precipitating tank and poured back on residue in tank No. 2, stirred well, and, after settling, let down once more into No. 3 for precipitation, after which it is emptied into tank No. 4 for evaporation, to recover the salts it contains (sulph. of soda and iron). The residue, which now has lost from 50 to 80 per cent. of the copper it contained, and ½ of it its weight, is further treated with a fully concentrated boiling hot solution of sulphate of iron, run down on it from tank No. 1, in sufficient quantity to cover it to three or four times its thickness, and after stirring well for one hour and allowing it to settle, the solution is drawn into the precipitation tank. This treatment with iron solution is to be repeated once or twice, according to richness of the matte in copper, until the latter is all, or nearly all, extracted. The liquid used to wash the residue at last, after getting weak in copper, is to be returned to tank No. 6, whence it came, and the liquid from tank No. 3, remaining after precipitation, to be returned to tank No. 1, whence it came.

If circumstances admit, instead of throwing the oxydized matte hot into tank No. 2, as described in IV., it is preferable to soak it again with water, or dilute solution, and leave it in a bin, the longer the better, stirring it up once per day, and keeping it damp, which will produce subsalts, and the fall of copper in the first precipitation will be greater.

The residue, which has shrunk in the treatment of rich matte to less than two-fifths in weight, contains practically nothing but peroxyd of iron, and all the gold or silver which the ores contained, and either practically no copper, or as much as was left in it purposely to shorten the process. If very rich in bullion it will be at once delivered to extraction by any of the known methods ; if poor, it goes back to smelting as a flux for the ores, which are, with rare exceptions, silicious, and in need of iron for flux. The bullion can be accumulated with the repetitions of this proceeding to any extent considered prudent, without laying too much capital dormant in the furnace bottom.

The residue from copper ores without bullion being peroxyd of iron, can easily be converted into iron sponge for precipitation, which at once will recover what copper was left in it ; or it may be used, as mentioned above, for flux, or both uses may be made of it simultaneously.

For the treatment of matte above 35 per cent., this method becomes impracticable as a self-sustaining process, but it may serve as a great auxiliary to other processes. The process can also be variously modified according to circumstances ; for instance, in the treatment of low grade matte the second oxydation, and also the treatment with iron solution, may, under certain precautions, be omitted altogether.

CORRESPONDENCE.

The Burleigh Rock Drill.

TO THE EDITOR : SIR—Our attention has been called to an article on Rock Drilling Machinery in your issue of August 22, 1874, in which the writer displays considerrable learning, and also an inexcusable amount of ignorance, or willful misrepresentation. To one or two of his statements, as touching our interests, we wish to reply. Of the comparative merits of the different machines upon which he discourses with the assumed fluency of an expert, we have nothing to say, except to note the fact that the object of the article is too transparent, viz. : the writing up of the Waring Drill, at the expense of all the others, and especially to the particular discredit of the Burleigh Rock Drill, which, however, speaks for itself in all parts of the world, and needs no elaborate puffing. The coolness with which this would-be oracle bows us out of the account is truly refreshing. He says, in speaking of the "Burleigh," "it has been so far superseded by the others that it is placed almost out of competition." If he had ever read our publications he would have seen how extensively our machinery has been introduced in Europe as well as in this country ; and if a man of common observation, and the reader of mining journals, he might possibly have become possessed of the knowledge of the fact of the recent very extensive introduction of our machines in the principal mines of the Pacific slope.

We are not in the habit of parading our business before the public, but we are not aware of being "superseded" anywhere ; though we do know, on the other hand, of instances where some of the superior (?) drills he describes have been discarded as too expensive in repairs, and the Burleigh substituted ; but, all this aside, we do not deny that there is merit in some, at least, of the machines he describes. But their valuable principles are stolen from us. We are attending to those cases in the United States Courts, and have no occasion to further discuss them here. Our principal object in this communication is to denounce and disprove the following infamous falsehood, taken from the article alluded to. We quote : "In this country, at the Hoosac Tunnel, where the Burleigh Drill is used, experience shows that the average life of each machine, without repairs, did not exceed 50 hours, and that it required four machines to keep one at work." In answer, we have to say, that we have sold but 60 drills to go to the Hoosac Tunnel. These furnished an equipment for four headings and the four enlargements, work upon all of which was prosecuted at the same time,

Of the performance of these machines we beg to call attention to the following extract from an affidavit made by WALTER SHANLY, Contractor at the Hoosac Tunnel, dated January 9th, 1874. This affidavit was used in a case now pending between this Company and the Hallowell Granite Company, for infringement in using the Ingersoll Drill, being one of several suits already commenced. The original may be found in the records of the court.

EXTRACTS.

"We have purchased 60 tunnel drills of the BURLEIGH ROCK DRILL COMPANY, and have used no other machine drills. The cost of repairs of the Burleigh Drill is, in my opinion, reasonable, the simplicity of the construction of the machines tending to keep down the cost of repairs and renewals. I have had a machine *work for three months without repairing, and in that time it drilled upwards of a mile of ground.* It drilled the same as a hole a mile long and of two inches in diameter. The usual hole is two inches in diameter; and the hole drilled by the machine is not only much larger than the hole drilled by hand, but is usually much deeper than could be conveniently drilled by hand. We commonly have drilled holes 13 feet in depth. Since commencing this work we have tunnelled through about three miles of solid rock, besides doing a great deal of other drilling in the enlargement of the headings."

We would add, that the 60 machines referred to in the statement are now in complete running order, and will soon be put upon another work. Now we would inquire: if the cost of repairs in the *two weeks'* trial of the superior (?) Rand and Waring Drills, the writer refers to, was 7.89 cents per foot drilled, for the former, and 2.55 cents per foot for the latter, in a test made under the *most favorable circumstances*, what will Prof. SPILLSBURY tell us was the cost per foot where *the Burleigh run three months in a tunnel without repairs*, and drilled over a mile of hole?

The following is from an affidavit (in the same case) of R. J. PARKER, Superintendent of machinery at the Hoosac Tunnel, and relating to another machine:

"At one time I recollect that one of the machines—No. 10—was kept at work in the tunnel 96 'shifts' without coming out for repairs, and that during that time 1,920 feet were drilled with it; the holes being two inches in diameter, and the *feeding device* being used all the time."

So much for the Hoosac Tunnel. At the Nesquehoning Tunnel in Pennsylvania, where all the drilling was done with the Burleigh Drills (17 in all), the work was completed in 21 months, and the drills are still in good order and running on other works. It was not an unusual thing for sixteen of the seventeen to be running at the same time. We have testimony to the very insignificant cost of repairs on that work, and for confirmation of this statement we would refer to J. DUTTON STEELE, Esq., the eminent engineer of said work.

We can multiply evidence in this regard if required, but we have furnished enough to constitute a complete refutation of the statements contained in the article in question, the whole animus of which seems to be an intense jealousy of this Company which, without, perhaps, so much bombast, and with no newspaper controversy with its *infringing opponents*, has pursued the even tenor of its way thus far, taking care of its business in supplying an ever-increasing demand for its drills, air compressors, and other machinery, but always ready to meet those adversaries in the only proper place—the United States Courts.

By giving as prominent a place in your Journal as was given the article to which this is a reply, you will confer a favor upon

Yours respectfully,

THE BURLEIGH ROCK DRILL COMPANY,
Fitchburgh, Mass.

October 1st, 1874.

Best Run Ever Made in the United States by a Charcoal Furnace Blowing in.

THE Scotia furnace started up and went into blast making from first month:

May	589 tons
June	696 "
July	788 "
August	860 "

This, for a 9-ft. bosh furnace, is without a parallel in the history of charcoal furnaces.—*Mining, Metals and Arts.*

Levels.

A correspondent calls attention to errors in a note on levels of important points, which we quoted from an exchange in our number of the 3d October. The figures appear quite unreliable. We give some more correct figures, as follows:

TABLE OF THE ELEVATION AND AREA OF THE GREAT LAKES.

Lake Superior, elevation above the sea	630 feet.	Area,	32,000 sq. miles.
Green Bay	578 "	"	2,000 "
Lake Michigan	578 "	"	22,400 "
Lake Huron	578 "	"	20,400 "
Lake St. Clair	570 "	"	360 "
Lake Erie	565 "	"	9,600 "
Lake Ontario	232 "	"	6 300 "

Some authors give Ontario 234, and Superior 627. JOHNSON puts Michigan and Huron as 600, and Green Bay, a portion of Michigan, as 578, which is evidently an error. HASWELL is also incorrect in his figures. The above are from PETERMANN'S map, which is based on the Coast Survey, and from the Geological Survey of Canada.

Notes.

Spirits of the Mine.—One morning last week, according to a local contemporary, large numbers of the miners employed at some of the Bedworth collieries, in North Warwickshire, England, giving way to a superstition which has long prevailed amongst their class, refused to descend the coal-pits in which they are employed. The men are credulous enough to believe that certain nocturnal sounds, which are doubtless produced by flocks of birds in their passage across the country, are harbingers of some impending colliery disaster. During Sunday night it was stated that these sounds, which have been designated "the seven whistlers," had been distinctly heard in the neighborhood of Bedworth, and the result was that on the following morning, when work should have been resumed, many of the men positively refused to descend the pits, and were to be seen on Monday idling about the streets of the town. The recent colliery accidents at Bedworth, and the "sounds" by which they are said to have been preceded, seem to have augmented, rather than diminished, this superstitious belief. Such superstitions are common among the German miners, who, as all know who are in any degree familiar with the folk-lore collected by the Grimms and others, have peopled the gloomy recesses of the mine with all kinds of weird spirits, kobolds and their like.

The Royal Saxon School of Mines.—A new chair of "Iron Metallurgy, Designs of Works, Metallurgical Engineering, and Salt Technology," has been established at the above-named school, at Freiburg, and this has been filled by Professor KERPELY, of Schemnitz. Dr. WALTHER will deliver lectures also on mining and metallurgical diseases and hygiene. The academy is now in its 109th year, and there are, inclusive of assistants and private teachers, 17 teachers. Coal mining will in future be taught equally as thoroughly as ore mining. The present plan is to encourage the separation of students into classes—viz., mining, surveying, general metallurgy, and iron metallurgy. A special laboratory is being built for iron metallurgy, so that the institution will have in the fall three chemical laboratories—viz., an analytical, a metallurgical (assaying), and one for the chemistry of iron in all branches.

Fused Steel and Iron.—Mr. P. M. PARSONS, of Melbourne House, Blackheath, Kent, Civil Engineer, has patented some improvements in the treatment of fused steel and iron, and apparatus therefor. The invention relates to means and apparatus for removing air or gas from fused iron and steel, so as to improve quality, and render the ingots or casting produced more solid and homogeneous. For this purpose, while the metal is contained in a fluid state in a ladle, converter, ingot mould, or other vessel, the vessel is closed air-tight and the air exhausted from it, or the vessel containing the molten metal is placed in an air-tight vessel or chamber from which the air is exhausted.

Prof. Tunner remarks that it is customary to attribute greater strength to cold rolled iron than to that which has been rolled hot. Although experiment has shown that such is the case with new iron, yet this is of little importance in practical use, because it does not last. The strength of such iron, says Prof. TUNNER, decreases gradually with time. This is a question which it would be well to determine by experiment.

The Johnstown Tribune says that "there were made at the Cambria Steel Works, for the week ending to-day, September 26th, *two hundred and eleven heats* of steel, amounting to 1,027 $\frac{1}{2}\frac{3}{2}\frac{8}{4}\frac{0}{0}$ tons of ingots, which beats anything ever before accomplished in the same time."

All Departments of the German iron trade have improved, and in some cases prices have advanced. The coal trade is more active, and, as the stocks of consumers have become exhausted, buyers are more numerous. The supply, however, is amply sufficient to meet the requirements.

COAL TRADE REVIEW.

Import Duty on Coal.

Anthracite free. *Bituminous*, per ton of 28 bushels, 80 lb. to the bushel, 75c., gold.

All *slack*, or *culm*, such as will pass through a half-inch screen, per ton of 28 bushels, 80 lb. per bushel, 40c., gold.

Not otherwise provided for, per ton, 40c. gold.

This is the only report published that gives full and accurate returns of the production of our Anthracite mines.

NEW YORK, Oct. 16, 1874.

The Production of Anthracite Coal for the week ending Oct. 10, 1874, was as follows:

Tons of 2240 lb.

Wyoming Region.	WEEK. Tons.	YEAR* Tons.
Delaware and Hudson Canal Co	41,991	1,823,277
Delaware, Lackawanna and Western R.R	55,925	1,925,915
Pennsylvania Coal Co	29,869	1,032,761
Lehigh Valley R.R	19,475	737,494
Pennsylvania and New York R.R	1,739	47,696
Central Railroad of New Jersey	45,194	1,100,774
Sold at the mines by L. & W. C. Co	837	15,891
	195,030	6,689,808
Lehigh Region.		
Lehigh Valley R.R	77,474	2,445,368
Central Railroad of New Jersey	34,065	890,204
Danville, Hazleton & W. B.R.R.,	854	31,960
	112,393	3,367,532
Schuylkill Region.		
Philadelphia and Reading R.R	158,692	3,877,664
Shamokin and Lykens Valley	22,661	707,092†
	181,353	4,584,756
Sullivan Region.		
Sullivan and Erie R.R	466	28,682
Total of all the regions	489,242	14,670,778

* Year beginning Jan. 1.

† No report received from the Lykens Valley Colliery.

The following table does not give the entire production of our bituminous mines, but it is by far the fullest report published.

The Production of Bituminous Coal for the week ending Oct. 10, was as follows:

Tons of 2000 lb.

Cumberland Region, Md.	Week. Tons.	Year. Tons.
C. & P. and O. B. R.'s	59,898	2,002,681
Barclay Region, Pa.		
Barclay R.R. gross tons	5,229	212,219
Broad Top Region, Pa.		
Huntingdon & Broad Top R.R	3,379	177,836
Clearfield, Region, Pa.		
Snow Shoe	1,423	46,379
Tyrone and Clearfield	15,050	477,793
Allegheny Region, Pa.		
Pennsylvania R.R	3,225	162,079
Pittsburgh Region, Pa.		
West Penn. R.R	4,105	150,576
Southwest Penn. R.R	330	5,810
Penn. and Westmoreland gas coal, Pa. R.R.	14,727	691,541
Pennsylvania R.R	10,863	355,598
Kanawha Region, W. Va. to Oct. 3d.		
Chesapeake and Ohio R.R	2,270	106,609
Shipments from *Block House Region, N. S.*		
Consigned to the Provinces, tons 2240 lb	501	11,197
" " " United States " " "	....	....
Shipments from *Pictou Region, N. S.*, to Oct. 3.		
Consigned to the United States tons 2240 lb.	1,801	46,073
" " " West Indies " " "	....	7,450
" " Canada " " "	3,975	89,290
" " Other provinces " " "	3,020	55,125

The Production of Coke for the week ending Oct. 3.
Tons of 2000 lb.

	Tons.	Year. Tons.
Tyrone and Clearfield	11	592
West Penn. R.R., " " " " "	394	10,360
Southwest Penn. R.R " " " " "	10,134	314,792
Gas Coal, Penn. R.R. " " " " "	890	28,890
Pittsburgh Coal, Penn. R.R. " " " "	1,200	52,113

The production of Anthracite for the week ending Oct. 10th was as follows: Wyoming Region 195,030 tons, being 2,571 tons less than the preceding week. In the Lehigh region, 112,393 tons, or 32,489 tons more than the week before, and in the Schuylkill region, 181,353 tons, being 19,408 tons less than the preceding week.

The total production of Anthracite from all the regions was for the week 489,242 tons, as against 478,576 tons the preceding week, (or an increase of 10,666 tons), and 479,043 tons for the corresponding week last year. From January 1st to Oct. 10th, there were produced 14,670,778 tons, as against 15,820,627 tons for the same period last year. The figures of last year's production are taken from the Pottsville *Miners' Journal*.

The Delaware and Hudson Canal Company has on stock at Honesdale 100,000 tons, at Rondout 54,000, and at Weehawken, 10,000 tons.

The receipts at Port Richmond were 74,000 tons; shipments, 50,000 tons; and balance on hand 80,000 tons.

Returns from Greenwich, Philadelphia:

	Bituminous.	Gas Coal.
Receipts	4,514	442
Shipments	4,196	311
On hand	2,823	2,029

The production of Cumberland coal from January 1 to Oct. 10, inclusive, was 2,002,681 net tons of 2000 lb., against 2 153,125 tons to the corresponding date in 1873. The production for the week was 59,898 tons, as compared with 71,155 tons for the corresponding week in 1873. This is a total decrease for the week of 11 257 as compared with 1873, and for the year, thus far, of 150,444 net tons.

The receipts of Cumberland coal at Locust Point (Baltimore) for the week were 16,030 tons; of West Virginia gas coal 2,580 tons.

Exports of coal from Baltimore from 1st January to 1st September, 61,787 tons as against 52,756 tons in the same time last year.

Tons of 2240 lb.	week.	year 1874.	year 1873.
The receipts of coal at Coal Port (Trenton)	8,673	218,766	286,899
" " " South Amboy	11,938	487,853	379,716
Shipments at Coal Port (Trenton)	8,288	218,287	289,411
" South Amboy	11,971	493,257	366,194

The receipts of coal by the Michigan Southern RR. at Buffalo for the week were 5,984 tons. The shipments by Lake, 4,982 tons. Receipts by Lake, 1,125 tons.

Freights on coal from Buffalo to Toledo, 25c. per ton; from Erie to Chicago, 65c.

Our coal dealers have become so accustomed to complaining of dull times that it appears impossible to get any other report from them, and yet it is very evident that several of them have done an exceedingly profitable business this season. If we analyse the subject we find that, as compared with last year, the country has not taken as much anthracite by 1¼ million tons, but it has paid, at least, 1¼ million dollars more for what has been taken than it did in '73, and there has been an increased economy exercised at the collieries; so that the average profits of the anthracite business have not declined greatly, if at all, from last year. As compared with 1872, the quantity of coal marketed thus far this year shows a falling off of only 370,000 tons, while prices, as determined by the Scranton auction sales, compare for the three years as follows:

	1872.	1873.	1874.
January	$3 76	$4 49	$5 30
February	3 80½	4 46	4 79
March	3 78½	4 56¼	4 84
April	3 61½	4 65	4 79½
May	3 59¾	4 75½	5 02
June	3 62	4 90½	5 05½
July	3 53	5 10½	5 12½
August	3 46½	5 17	5 41¾
September	3 99	5 17	5 50
Average 9 months	$3 68	$4 81	$5 10

This, of course, is a guide only in calculating the returns on the coal marketed in competing points, or say, two-thirds of the entire output. It is, therefore, quite evident that some of the "growling" about hard times and dull business is "put on for effect." We shall refer to this subject again.

There is a very good demand for stove and chestnut coal, as is natural at this time of the year. Other sizes are heavy, and there is much undercutting in the market, the prices quoted by the large companies being rarely obtained by dealers. The reduction in output for October of 25 per cent. will scarcely be sufficient for November, judging from present appearances. The advance of 15 cents per ton will be made in November, as per programme.

The bituminous trade is quite stagnant, and there is nothing new to report.

The 500 tons Australian shale, of which we long ago announced the consignment to this port and its arrival here, is marketed with great difficulty. About 150 tons have been sold in lots of 25 tons to some of the neighboring gas works, and the balance, 350 tons, have gone into store; the price, $35 gold, is so much above the current price of our Kanawha cannels that there is little prospect of any renewal of importation of this "enricher."

We note the frequent arrival of cargoes of this shale at San Francisco.

Programme Prices of Schuylkill, Lackawanna, Wilkes-Barre and Lehigh Coals at the New York Shipping Ports.

1874.				
March	Lump.	Wilkes-Barre, Lackawanna, and Schuylkill.	4 55	5 35
April		Lehigh Coal Exchange.	4 00	5 40
May	Stove.	Wilkes-Barre, Lackawanna, and Schuylkill.	4 65	5 50
June			4 70	5 50
July			4 80	5 60
August			4 90	5 70
September			4 95	5 75
October			5 00	5 80
November			5 40	6 20
Season contracts.			4 70	5 50
Scranton Sale, Sept. 26			4 99	5 79
March	Grate or broken.	Wilkes-Barre, Lackawanna, and Schuylkill.	4 75	5 30
April		Lehigh Coal Exchange.	4 80	5 35
May			4 90	5 45
June			5 00	5 55
July			5 05	5 60
August			5 15	5 70
September			5 30	5 85
October			5 60	6 05
November			5 75	6 30
Season contracts.			4 80	5 35
Scranton Sale, Sept. 26			5 09	5 74
March	Egg.	Wilkes-Barre, Lackawanna, and Schuylkill.	4 90	5 30
April		Lehigh Coal Exchange.	4 95	5 35
May			5 05	5 45
June			5 15	5 55
July			5 30	5 70
August			5 45	5 85
September			5 60	6 05
October			5 75	6 20
November			5 90	6 35
Season contracts.			5 05	5 45
Scranton Sale, Sept. 26			5 34	5 74
March	Stove.	Wilkes-Barre, Lackawanna, and Schuylkill.	5 35	5 45
April		Lehigh Coal Exchange.	5 40	5 50
May			5 50	5 60
June			5 65	5 75
July			5 80	5 90
August			5 90	6 00
September			6 05	6 15
October			6 35	6 45
November			6 45	6 55
Season contracts.			5 45	5 55
Scranton Sale, Sept. 26			5 79	5 99
March	Chestnut.	Wilkes-Barre, Lackawanna, and Schuylkill.	4 40	4 35
April		Lehigh Coal Exchange.	4 55	4 50
May			4 65	4 60
June			4 75	4 70
July			4 90	4 85
August			5 05	5 00
September			5 20	5 15
October			5 50	5 45
November			6 30	6 25
Season contracts.			4 79	4 79
Scranton Sale, Sept. 26			4 99	4 94

Wholesale Prices for Oct. of Anthracite f.o.b., at the Tide Water Shipping Ports per ton of 2240 lb.

	Lump.	Steamer.	Grate.	Egg.	Stove.	Chestnut.
Wyoming Coals.						
†Lackawanna and Scranton at Elizabethport & Hoboken	5 40	5 50	5 60	5 75	6 25	5 20
‡Pittston at Newburgh	5 00	5 00	5 10	5 30	5 75	4 70
Wilkesbarre at Port Johnston	5 40	5 50	5 60	5 75	6 25	5 20
Plymouth, R. A.	....	....	5 60	5 75	6 35	5 20
Susque. Coal Co. at Amboy W.A.	5 40	5 50	5 60	5 75	6 35	5 20
Kingston at Hoboken	5 40	5 50	5 60	5 75	6 25	5 20
Lehigh Coals.						
Old Company at Port Johnston	6 35	....	6 30	6 30	6 45	5 50
Old Company's Room Run "	5 85	....	5 85	5 85	6 20	5 20
Sugar Loaf at "	6 35	....	6 30	6 30	6 30	5 35
Lehigh Coal Exchange "	6 20	....	6 15	6 15	6 30	5 35
Honey Brook at Elizabethport	6 20	....	6 15	6 15	6 30	5 35
Spring Mt. C. Co. at Hoboken	6 20	....	6 15	6 15	6 30	5 35
Beaver Meadow at South Amboy	6 20	....	6 15	6 15	6 30	5 35
Schuylkill Coals at Port Richmond.						
Schuylkill white ash	4 90	5 00	5 10	5 25	5 75	4 30
Schuylkill red ash	....	....	5 25	5 35	5 80	4 40
Shamokin white and red ash	....	....	....	5 25	5 80	4 45
N. Franklin	....	....	5 70	5 70	5 75	4 45
Lorberry	....	....	6 05	6 05	6 05	4 65
Lykens Valley	....	....	....	6 70	6 70	5 25

† f.o.b. in New York Harbor.

‡ These are the rates for Pittston coal on registered contracts only. Buyers not having contracts will be charged 15 cents per ton in addition to the above prices.

Retail Prices.

per 2000 lb. are as follows:

	Grate and Egg.	Stove.	Chestnut.
Pittston coal, in yard	$6 00	$6 20	$5 40
Delaware & Hudson, delivered	7 35	7 60	6 85
Scranton, in yard	7 25	7 50	6 80
Wilkes-Barre, delivered	7 10	7 35	6 60
Lehigh & Locust Mountain,	7 50	8 00	7 00
Schuylkill Red Ash	8 25		
Cumberland	8 00		

	Per ton.
Freight from Hoboken and Weehawken to New York	40c.
" " Elizabethport & Port Johnston to New York	40c.
" " South Amboy to New York	45c.
" " Newburgh to New York	65c.
" " Port Richmond, "Phila." to N. Y. alongside	95c.
" " Rondout to New York by boat or barges of the D. & H. Canal Co. "delivered"	50c.

Cargo Prices of Bituminous Coal.

Domestic Gas Coals.

	At the Shipping Ports.	Alongside in New York.
Per ton of 2240 lb.		
Westmoreland and Penn, at Greenwich, Philadelphia	$6 25	$7 65
" " at S. Amboy	7 00	....
Red Bank Cannel Pa., at Phil	8 50	9 50
" " at S. Amboy	9 00	....
" Orrel, "	7 00	7 65
" " at Philadelphia	6 25	....
Youghiogheny, Waverly Co, at Baltimore	6 00	7 65
Despard, West Va., "	5 50	7 40
Murphy Run, W. Va. at Baltimore	5 50	7 40
Fairmount, W. Va "	5 50	7 40
Newburgh Orrel, Md. "	5 50	40
Cannelton Cannel, W. Va., at Richmond.	11 00	12 80
" Splint, " "	5 50	7 50
Peytona Cannel, " "	....	12 50
Sterling " Ohio	....	14 00
Straitsville, " Lyonsdale Cannel	....	11 50
At Sandusky, O	3 90	....

FOREIGN GAS COALS.

	Sterling.	Am. cur'cy.
Newcastle, at Newcastle-on-Tyne	12/@13/6	7 00@ 8 00
Liverpool House Orrel, at Liverpool	29/	13 00
Ince Hall Cannel "	52/	18 00
" Gas Cannel "	40/	15 00
Scotch Gas Cannel, at Glasgow, nominal.	28/	9 50

	Gold.	
Block House, at Cow Bay, N.S.	2 25	6 50
Caledonia, at Port Caledonia	1 87½	5 70
Glace Bay, at Glace Bay	2 00	5 50
Lingan, at Lingan Bay	2 25	6 50
Sydney, International and Reserve mines, at Sydney	2 25	5 75
Pictou, Albion and Vale mines, at Pictou	2 50	6 50

STEAM AND HOUSE COALS.

Broad Top, at the mine, $1 25; at Port Richmond, Phil	4 75@5 00	6 00@6 25
Cumberland, at Georgetown and Alexandria, Va.	4 30@4 40	5 75@6 00
Cumberland at Baltimore	4 60@4 75	6 25@6 50
Clearfield, "Derby," "Kitanning" and "Sterling," at the mines, $1 25; at Greenwich, Phil	4 75@5 00	6 25
James River, carbonite, at Richmond, Va	6 75	9 00
" bituminous, "	4 00	6 25
Schooner freights to New York are		$1 25
Barge " " " "		1 65

Retail Prices in New York.

Per ton of 2000 lb.

Liverpool House Orrel	$20 00@22 00
Liverpool House Cannel	....@25 00
American Block,	16 00@ ....
Straitsville Cannel	16 00@ ....
Carbonite	12 00@ ....

Coal Trade of Philadelphia.

PHILADELPHIA, Oct. 14, 1874.

Bituminous Coal, Wholesale.

Penn. and Westmoreland (Gas), f.o.b., Greenwich	6 25
Broad Top, (according to destination) f.o.b., Port Richmond	4 75@5 00
Clearfield f.o.b. at Greenwich, according to destination	4 75@5 00

Bituminous, Retail.

$6 60 in yard, per 2240 lb., cartage added.

Anthracite, Retail.

Egg, per 2000 lb., $6 20; Stove, $6 25; Chestnut, $5 10; delivery carts, 75 cents extra.

Baltimore, Md.

Oct. 14, 1874.

Reported by our Special Correspondent.

WHOLESALE PRICES PER 2240 lb.

ANTHRACITE.

	afloat.	at depot.
Wilkes-Barre, "Lee," or "Diamond,"		
Lump, steamboat	$5 00	$5 40
Broken	5 25	5 50
Egg	5 62	5 90
Stove	5 82	6 10
Pittston and Plymouth.		
Lump, steamboat, and broken	....	5 45
Egg	....	5 80
Stove	....	6 00
Lykens Valley, red ash, all sizes	6 00	6 30

From wharf or yard, wholesale, 50@75c. additional.
By retail, all kinds and sizes, per 2,240 lb, $7@8 00.

BITUMINOUS.

George's Creek and Cumberland f. o. b. at Locust Point for cargoes	4 60 4 75
West Va. Gas Coal f. o. b. at Locust Point	5 50 ....
Kanawha Cannel, coarse	13 00 ....
Tyrone	7 25 ....
Ritchie Mineral of West Virginia	1 00 ....

Boston.

Oct. 14, 1874.

Reported by our special correspondent.

CARGO PRICES TO TRADE.

Lingan coal	$ 5 75	Westmoreland	7 75
Caledonia	5 10	Waverly Co. Youghiogh'y	7 75
Pictou	6 15	Cannelton Cannel	13 50
Block House	5 60	Cumberland	5 90@ 6 20
Red Bank Cannel	10 00	Anthracite,	.6 50@ 7 00
Glace Bay	5 40	" Retail	8 00
Sydney	7 25		

From the *Commercial Bulletin* of October 10.

Anthracite is in slightly improved request this week, with a temporary enquiry for a few odd cargoes to outport yards and foundries. The fact that the enquiry for six or eight cargoes would agitate the street is a sufficient commentary on the dearth of business generally.

Bituminous is a trifle more active. We hear of a contract for 3000 tons Caledonia $1 75 f. o. b. for which vessels have been secured to New York at $1 75, and to Boston at from $2 00 to $2 25, the smaller craft to this port. We have an arrival of Red Bank Cannel a substitute for English at one-half the cost, that is said to burn to a light ash, in a blaze like wood, and to outlast the English coal.

Buffalo, N. Y.

Oct. 14, 1874.

Reported by our Special Correspondent.

Per ton of 2000 lb.

	Slack.	Nut & Slack.	Nut.	Lump
Connelsville coke				6 50
Sterling cannel				6 00
Red Bank				5 75
Youghiogheny coal for gas				5 50
Briar Hill coal		3 25		5 00
Fairmount "		3 25	3 50	4 25
Oatfish "		3 25	3 75	4 50
Stoneboro "	2 75		3 50	

Briar Hill coal, and Stirling and Red Bank cannels, at $8; all other coals $1 per ton above wholesale prices.

Anthracite f. o. b. vessel. Retail prices delivered and screened, $1 per ton additional.

Grate	6 70	Stove	7 00
Egg	6 70	Chestnut	5 60

Chicago, Ill.

Oct. 12, 1874.

Specially reported by Messrs. RENO & LITTLE, Coal Merchants.

No change in prices of coal.

Retail prices per ton of 2000 lb. delivered to buyer.

		BITUMINOUS.	
Lehigh Lump	$10 75	Briar Hill and Erie	7 50@ ....
Lehigh prepared and car load lots	9 75	Walnut Hill (W. Va.)	6 50@ ....
Lackawanna, Wilkes-Barre and Pittston,*		Midway (West Va.)	6 50@ ....
		Cannel	8 00@ 9 00
Grate, egg, and chestnut.	9 00	Blossburg	8 00
Stove or range	9 50	Indiana Block	6 00
		Hocking "Brooks"	6 00
		Wilmington and Illinois	5 00

*75 cents off these prices for car load lots to country dealers and manufacturers.

Cleveland, O.

Oct. 14, 1874.

Reported by our Special Correspondent.

Per ton of 2000 lb.

Youghiogheny, l'p, f.o.b.	$4 65	Straitsville, f.o.b.	$3 40
Youghiogheny, nut	3 60	Columbiana "	3 40
Briar Hill, (Church Hill).	4 25	Strip Vein "	3 65
" " (Brookfield)	4 10	Mountain Blossburg (blacksmith)., f.o.b.	5 75
Massilon, according to quality	$3 40 to 3 65	Darlington and Sterling Cannel, f.o.b.	4 50
Hocking Valley, f.o.b.	3 50		
Anthracite, Lackawanna on cars,		Egg	$6 85
" " " "		Stove	7 30
" " " "		Chestnut	6 90
Youghiogheny Coke,	" "	here	5 50
Connellsville	" " "		5 75

Cincinnati, O.

Oct. 13, 1874.

Specially reported by Messrs. A. BUCHANAN & Co., wholesale and retail dealers in coal and coke.

There is very little coal afloat unsold, and dealers are asking 13 cents for Pittsburgh coal, 8 cents for Pomeroy, and 11 cents for Semi-Cannel.

The following are retail prices: Youghiogheny coal, 18 cen's; Pomeroy, 14 cents; Semi-Cannel, 15 cents; Cannel, 24 cents; Hard coke, 12 cents; Soft coke, 10 cents; and Anthracite coal from $9 50 to $11 00 per ton.

Per ton of 2000 lb.

	Bush.	Ton.
Youghiogheny, or Pittsburgh, afloat	13 c.	$2 86
Pomeroy coal	8 c.	
Cannel coal	18c.	4 68
Semi Cannel	11 c.	2 60

The following are retail prices delivered:

Youghiogheny	18 c. $3 90@$
Pomeroy	14 c.
Cannel	24 c.
Kanawha Semi Cannel	15c.
Anthracite	$9 50@11 00
Foundry coke	12c.
Soft coke	10c.

Detroit, Mich.

Oct. 13, 1874.

Specially reported by Messrs. ROBINSON & KEYS, dealers in all kinds of coal.

We have no change in prices to report as yet. Business is improving and tolerably active. The cold weather of the past few days has brought the orders in quite rapidly.

Per ton of 2000 lb.

Lehigh Lump, per ton.	$10 50	Blossburg	8 50
Lehigh " prep. sizes.	9 50	Briar Hill	7 50
Wilkes-Barre, Grate and Egg	8 50	Willow Bank	7 00
		Erie	7 50
Wilkes-Barre, Stove and Nut	9 00	Massillon	7 00

Erie, Pa.

Oct. 14, 1874.

Reported by our Special Correspondent.

Wholesale, per ton of 2,000 lb.

Anthracite f.o.b. vessels.

Lump	$6 60	Stove	$6 65
Grate	6 10	Chestnut	6 05
Egg	6 10		

Bituminous f.o.b.

Briar Hill	$4 40	Beaver	$4 25

Retail, per ton of 2,000 lb.

Anthracite.

Lehigh, chestnut	$8 50@$9 00
" prepared	8 75@ 9 25
Lykens Valley, stove	9 50@10 00
Lykens Valley, chestnut	8 00@ 8 50
Schuylkill and Wilkesbarre	7 50@ 8 00
Blossburg (Smithing)	7 50@ 8 00

Bituminous.

Chenango Valley (Ormsby), lump	$6 00
Mahoning Valley (Briar Hill), "	5 00
Nut, all kinds	4 00
No. 1 slack	3 06
Bituminous, by car loads to factories	5 35

Indianapolis, Ind.

Oct. 13, 1874.

Specially reported by Messrs. H. McCOY & Co.

Quotations remain as follows:

Per ton of 2000 lb.

BITUMINOUS.			
Best Block coal	$2 90	Indiana cannel	6 50
Best Highland	2 40	Hocking Valley	3 00
Block Nut	1 65	Youghiogheny	5 42
Highland "	1 65	Blossburg (smithing)	7 30
Block slack, per car load.	15 00	Piedmont "	7 75
Peytona, cannel per ton.	8 50	Gas coke, per bushel.	9½c

ANTHRACITE (Lackawanna).			
Grate	$8 70	Chestnut	8 60
Egg	8 70	Stove	8 85

Retail, per bushel of 70 lb.

Block	14c.	Peytonia Cannel	32c.
Highland	12	Indiana "	28
Highland Nut	9	Youghiogheny	25
Block "	9	Blossburg	27
Slack	7	Piedmont	30

ANTHRACITE.	per ton.		per ton.
Grate	$10 50	Stove	$10 50
Egg	10 50	Chestnut	10 50

Louisville, Ky.

Oct. 13, 1874.

Specially reported by Messrs. BYRNE & SPEED.

The retail price of coal advanced yesterday one cent per bushel. The supply in the river is becoming limited, with an increasing demand. Kentucky is coming in more freely. The following are our present prices:

Pittsburgh, per load of 1900 lb	$4 00
Pomeroy	
Buckeye Cannel	5 50
Peytona Cannel	6 00
Nut and Slack	2 75
Kentucky lump, per load	3 50
" nut, "	3 00
" Slack "	
City-made Coke, per bushel	10c
Kentucky on cars at wholesale, per bush.	10c
Anthracite, per ton	$10 to $10 50

Milwaukee, Wis.

Oct. 13, 1874.

Specially reported by Messrs. R. P. ELMORE & Co.

Quotations are unchanged.

Retail prices per ton of 2000 lb.

Lehigh Lump	$10 00	Briar Hill, select	$8 50
Lehigh Prepared	10 50	Blossburgh	8 00
Lackawanna	9 50	Pittsburgh	7 50

New Orleans, La.

Oct. 10, 1874.

The demand is improving and prices are firm.

Pittsburgh coal, retail, per bbl	75c.
" wholesale	45c.
" to steamboats, per box	60c.
" to manufacturers, per bbl	65c.
" shipments per hhd	$7 00
Anthracite, retail, per ton	$12 50
" wholesale per ton	$8 50
Spadra (Arkansas) coal, retail. per bbl	75c.
Mt. Carbon, wholesale, per bbl	45c.
" " retail per bbl	65c.
Virginia Cannel, per bbl	90c.
Scotch Cannel, per bbl	1 00

Pittsburgh, Pa.

Oct. 12, 1874.

Reported by our Special Correspondent.

The imported Italians on the Pan Handle Railroad are working without molestation, at 3 cents per bushel for mining. Trade continues dull, and prices remain unchanged.

Per ton of 2000 lb. and Bushel of 76 lb.

	per ton.		per ton
Youghiogheny coal	$2 15	Pittsburgh retail delivered	
" coke	2 75	per bushel	9c@10c
Connellsville coal	2 25	Anth'cite on cars Lehigh	$7 75
" coke	3 25	" " Wilkes-	
Pittsburgh coal	2 00	Barre	6 75

Twenty-five to fifty cents per ton additional for delivery.

San Francisco.

The following is from the San Francisco correspondence, dated October 7th, of the Sacramento *Record*:

COAL.—Supplies are ample, and yet, under the increased production incident to this season of the year, prices exhibit a firm tendency, and some cargoes have been sold to arrive 30 or 60 days hence at a slight improvement. We quote California (Mount Diablo), $6 25 for fine and $8 25 for coarse; Bellingham Bay, $8 50; Coos Bay, $10; Seattle, $10; Scranton, $13@$14; Lehigh, $15@$16; Cumberland, $15@$17, latter figures for casks; Australian, $10; English, $9 50@$10; West Hartley, $12; Scotch, $10 50; British Columbia, $10 50@$11 50 per ton; Coke, 60c. per bshl.

St. Louis, Mo.

Oct. 12, 1874.

Specially Reported by the COLLINSVILLE COAL AND MINING COMPANY.

ANTHRACITE.

Per ton of 2000 lb.

	City delivery.
Lehigh Lump	$13 50
Lackawanna and Wilkesbarre	12 50
Semi Anthracite	9 50

BITUMINOUS.

Per ton of 2000 lb.

	E. St. Louis.	City delivery
Washington Indiana—smithing	$4 00	$4 87
O'Fallon, Ills	2 00	3 00
Collinsville and Belleville, Ills	1 75	2 75
Indiana Cannel	6 00	7 00
Missouri Cannel		5 00

Retail, 25c. per ton additional.

Montreal.

Oct. 12, 1874.

Reported by our Special Correspondent.

Continue quotations.

Per ton of 2,240 lb.

Scotch Steam	$4 50@4 75	Cape Breton Steam	$4 00
Pictou "	4 25	Newcastle Smiths	5 50

Anthracite at retail, 2,000 lb., delivered, less 5 per cent.

Egg	$8 00	Nut	$8 00
Stove	8 50	Chestnut	7 75

Toledo, Ohio.

Oct. 12, 1874.

Per ton of 2000 lb,

Specially reported by Messrs. GOSLINE & BARBOUR.

Retail.		BITUMINOUS.	Retail.
Wilkes-Barre and Scranton, Large and Small Egg,	$8 00	Blossb'g and Cumberl'd,	$8 00
Stove	8 25	Massillon Lump	6 00
Chestnut	8 00	Briar Hill	7 00
Lehigh Lump	10 00	Straitsville	3 75
		Hocking Valley	4 00

Halifax, N. S.

Oct. 12, 1874.

Reported by our Special Correspondent.

The prices of coal at Halifax have varied very little since our last advices. Freights have somewhat improved, although the price of coal at the mines is the same. The following is about the present price in Halifax.

Prices per ton of 2240 lb. in gold.

Sydney (old mines)	$4 75	Little Glace Bay	3 75
Gowrie	3 75	Blockhouse	4 00
Victoria	3 75	Albion (at Railroad)	4 25

Toronto, Ont.

Oct. 12, 1874.

Reported by our Special Correspondent.

The prices and terms of the Toronto Coal Exchange remain as follows:

ANTHRACITE.	per ton.		per ton.
Broken	$7 65	Chestnut	$7 65
Egg	7 65	Lehigh	9 00
Stove	8 15		

BITUMINOUS.			
Blossburgh	7 50	Screenings	5 00
Briar Hill	7 00	Soft Nut	5 50

Rates of Transportation on Anthracite Coal to Tide Points.

**From Mauch Chunk to New York* "towing limits," via Morris Canal $2 65

**From Mauch Chunk to Jersey City* "for reshipment," via Lehigh Valley R. R. 2 45

** From Phillipsburg to Hoboken* "for shipment," via Delaware, Lackawanna & Western R. R. 1 34

† From Penn Haven to Elizabethport, Port Johnston and Hoboken, via Central railroad of New Jersey 2 41

‡ From Mauch Chunk to Elizabethport, Port Johnston, Hoboken and South Amboy, via Lehigh Valley R. R. 2 25

From Port Delaware to New York and Jersey City, via Morris Canal 1 74

From Mauch Chunk to Philadelphia via N. P. R. R. 1 75

From Schuylkill Haven to Philadelphia, via canal. Freight 65c., tolls $1 10 1 75

From Tamaqua to Port Richmond "for shipment," via P. & R. R. R. 2 07

From Schuylkill Haven to New York, via canal 2 72

From Upper Lehigh to Jersey City, via Central R. R. of N. J. 3 24

From Tamaqua to Philadelphia, via Phil. & Read. R. R. main line 2 17

On canal coal at Jersey City an additional charge of 20 cents per ton will be made for transferring coal from boat to boat, and thirty cents per ton for placing the same on the wharves and re-shipping.

The rate on coal for way-points on the New Jersey railroads will be $1 15 per ton from Mauch Chunk to Phillipsburg.

* At a recent meeting of the N. Y. and Lehigh Coal Exchange, it was decided to make the price of coal at this point for *way trade* the same, whether shipped via canal or railroad.

* 46 cents additional to this rate is added on coal for consumption.

† The rate from Phillipsburg to these points is 83 cents per ton less. This rate does not include wharfage or shipping expenses at tide ports.

‡ From Penn Haven to these points it is 16 cents additional, and from Phillipsburg the rate is 91 cents less.

Freights on Bituminous Coals from the Mines to Tide-Water Shipping Ports.

From the Mines to Cumberland and State Line (say an average of 20 miles) the charge is 3 cents per ton of 2240 lb. per mile.

From State Line to Amboy, (346 miles) $4 00 per ton of 2000 lb. On coal shipped beyond that point there is a drawback of 50 cents per net ton.

From Cumberland to Baltimore, (178 miles) $2 58 per ton of 2240 lb., or $2 30 per net ton, and 4 cents per gross ton for use of cars.

From Cumberland to Georgetown, (152 miles) by canal, $1 76 per ton of 2240 lb. *To Alexandria, Va.*, 11 cents per ton more.

From the Mines to Piedmont, (from 4 to 10 miles) 5 cents per ton of 2240 lb. per mile on distances less than 5 miles, and 4 cents per ton per mile on distances not over 10 miles.

From Piedmont to Baltimore, (206 miles) $2 97 per ton of 2240 lb., or $2 65 per net ton.

From any point in the Kanawha Valley to the James River wharves below Richmond (say 350 miles) by C. and O. R. R., including terminal charges, per ton of 2000 lb., for Cannel coal, $5 35. Subject to rebate on large quantities.

Do., do., for Semi Cannel or Splint, $3 65.

From Hawks Nest to Richmond (say 300 miles) the freight on Bituminous or Splint is $3 25 per ton of 2000 lb; on Cannelite it is $5 00.

From Irwin to W. Phila. (say 332 miles) per P. R. R. Penn. Westmoreland gas coal, per ton of 2000 lb. $5 00

From Osceola to W. Phila. (say 248 miles) per T. & C. R.R. per ton bituminous coal of 2000 lb. 3 55

From Fairmount and Clarksburg to Baltimore (say 300 miles) via B. & O. R. R. including loading, per 2000 lb. 5 20

On through coal after deducting drawback 4 15

From Richmond, Va., to New York, 392 miles per 2000 lb. 2 10

" " " Boston about 650 " " 3 00

" " " Philadelphia 293 miles " 1 75

From the Mines to Richmond via James River and Kanawha Canal, 15 miles 52

Freights.

The condition of freights to river and sound ports continues in the unsettled condition noted in our last, and in absence of any reliable figures we omit quotations. We hear of charters having been taken during the week to Boston at $1 35@1 45, and a 600 ton schooner at the remarkably low rate of $1 10. Rates from Baltimore and Georgetown are firmer with an advance of from 10c. to. 20c. Philadelphia rates are unchanged, and we quote as in our last, to Boston $1 60 and Providence $1 35.

Messrs. BIRD, PERKINS & JOB report foreign freights as follows:

General remarks.—Although this is the season when receipts of grain, cotton, petroleum, etc., are the heaviest, and the consequent demand for tonnage usually the most active, the anticipations of shipowners looking to remunerative employment for their vessels have not been realized; and the past fortnight has brought with it no relief from the general depression that has characterized the shipping interest the entire season thus far. Each week brings into our leading seaports large supplies of tonnage, both foreign and domestic, and rates have been moving daily, more and more, in favor of shippers. Long voyages are preferred, even at the present low freights, it being generally conceded that no immediate improvement can reasonably be anticipated.

Coal Freights from the Provinces to the States.—The extreme

low freights which have been accepted for this business have induced some further orders, which are solely in our hands. The execution of these orders is contingent on a continuation of the present freights. Our orders cover shipments from *Sydney, Glace Bay, Caledonia, Cow Bay*, for delivery at *New York*, as well as *Boston and other New England Ports*, at rates varying from $1 75 to $2 25, depending on ports of shipment and delivery. Our most recent charters have been 650 tons, Caledonia to New York, at $1 75; 900 tons, Caledonia to New York, at $1 75.

From the Provinces to the West Indies.—There has been a falling off in the demand for tonnage for this business; and we reduce our quotations from those ruling two weeks since; most of the charters effected thus far have been speculative, and at rates that will not leave a margin to shippers. The recent advices from the West Indies indicate that the markets there, as elsewhere, are fully stocked with coal. The high freights paid from the Provinces the last two years to supply coal ordered thence, has had the effect to direct this business back again to the old channels, and the decline in coal in England, together with the low freights ruling thence to the West Indies, have enabled the English colliers to regain a large portion of their lost trade in those markets. We have recently closed the following freights: 500 tons, Glace Bay to Porto Rico, at $3 50, gold.

Some few vessels have loaded coal on ship account, seeking markets in the West Indies. Our present orders are entirely for small or medium-sized vessels from

Pictou to North Side Cuba		at $3 00	gold
Cape Breton to Barbadoes		3 50	"
" " "	with privilege of a second port	3 75	"
" "	Porto Rico	4 00	"
" "	North Side Cuba	3 00	"

From the Provinces to South America.—We have closed 450 tons, Pictou to Bahia, at $5 75, and can use another medium vessel at about the same rate.

Lehigh & Delaware Division Canals.

Until further notice the rates of toll on the above canals will be as follows:

From Mauch Chunk to Easton, 55c. per ton. From Maunch Chunk to New Hope or Bristol, 90c. per ton.

Towing from Bristol to Philadelphia, 7c. per ton.

On local shipments the toll sheets of 1873 will be adopted until further notice.

REVIEW OF THE BRITISH COAL AND IRON TRADES.

Compiled from our exchanges bearing date to October 2d, 1874.

An analysis of the reports coming in from our various correspondents at home and abroad, warrants the conclusion that we have at length entered upon a sound and steady upward movement in the iron trade. The two leading rail districts are now receiving more inquiries, and some large lots are said to be just about ready for negotiation. Prices are stiffening in consequence, but it is tolerably clear that a good deal of capital has been made out of a few exceptional sales at low rates. We believe the quantities actually booked at these low figures are only a small proportion of the quantities on makers' books, but in a flat market buyers naturally make the most of any special transaction that will favor their operations. Steel rails are being sold freely at prices that leave no large margin of difference in favor of iron, but this state of things is not likely to continue long, for already the price of hematite pig iron has advanced, and is showing a tendency to go still higher, so that the quotations for rails may be expected to improve in a corresponding degree. It seems to be the opinion of the most experienced gentlemen connected with the hematite business, that we are now entering upon a period of improved trade. The Staffordshire trade has been very dull for a comparatively long time. Marked iron remains on the basis of £12 for bars. The general state of things has been about half regular work, except at particular establishments. Now the works are in full swing; orders are said to be coming in freely, and manufacturers have booked contracts that will ensure them work for some time ahead. This applies to North Staffordshire, Shropshire, and to the Derby and Yorkshire districts. A more hopeful and confident tone prevails throughout. Additional blast furnaces are being put in operation, and, altogether, things are looking much brighter than they were. It is expected that a good business will be done at the quarterly meetings. In Scotland and Cleveland the reports from the plate and angle makers are more encouraging. Cleveland.—No. 1 is quoted at 70/, and No. 4, forge, 58/. Glasgow.—Warrants during the week have advanced from 84/ 9d. to 89/ prompt cash. No. 1 Eglinton is held at 93/. Engineers in various parts have received recently some very extensive orders for marine engines. Many other branches of trade, more or less intimately associated with the iron trade, are doing a good business, so that, on the whole, we cannot but regard the position and prospects of the iron trade generally as reasonably encouraging, and as warranting an expectation of a good winter's work.

London.—There has been a moderate quantity of house coal, with steady demand. Hartley's are quoted at from 23/@23 3d., and original Hartlepool, 24/ 6d.

Cleveland.—The coal trade in this district still continues in an unsettled state, pending the action of the Board of Arbitration.

North Staffordshire.—The output of coal from this district though considerably reduced, is more than sufficient to meet the requirements, and prices are weak.

South Staffordshire.—The demand for coal in this district is improving, but it is still considerably under the available rate of supply. Common forge coal of the thin measures is obtainable as low as 10/ per ton.

South Yorkshire and Derbyshire.—The tone of the coal trade has within the past week been scarcely so good as it was previously. The quantity of house coal sent to London is about an average one, and the same may be said with regard to other kinds of fuel. Best house coal is quoted at 13/@16/.

Lancashire.—The better qualities of coal show decided signs of improvement. Best hand picked gas coal at the pit mouth is quoted at 15/ per ton, and ordinary screened gas coal at from 12/@14/ per ton. Coke is not very active, but prices are maintained.

South Wales and Monmouthshire.—A satisfactory condition of the coal trade, with a regular resumption at all the collieries, and the prospects of an unbroken run of prosperous trade for the remainder of the year, comprise the reports from these districts. The coke trade is active.

Scotland.—House coal is in good request, with large accumulations at the pit heads, and this, notwithstanding the supply sent to the districts of *Fife* and *Clackmannanshire*, where no business is yet doing. Manufacturing coals and coke have fallen from 1/ to 2/ per ton during the week.

IRON MARKET REVIEW.

Import Duties.

The following are the duties in Gold on Iron:

Flat Iron, not less than 1, nor more than 6 inches wide, nor less than ¾, nor more than 2 inches thick. *Round Iron*, not less than ¾, nor more than 2 inches in diameter, and *Square Iron*, not less than ½, nor more than 2 inches square ₱ lb. 9-10 of 1c.

Flat Round or Square Iron, of larger or smaller sizes than the above mentioned, per lb 1 35-1000

Provided, that all iron in slabs, blooms, loops, or other forms, less finished than bars, and more advanced than pig iron, except castings, shall pay the same as iron in bars.

Provided, that none of the above iron shall pay less than 31½ per cent.

Railroad Iron.....630. per 100 lb.
Boiler plates, or other plate iron not less than 3-16 of an inch thick, per lb..... 1 35-100 c.
Scrap castings per ton..... $5 40
" *wrought* " " 7 00
Pig iron per ton..... 6 30
Iron ore 10 per cent. *ad valorem*.

New York.

Oct. 16, 1874.

There is no change in the condition of the iron trade. It is quite evident we are to have a dull winter, and no purchases are being made except in small lots for immediate consumption. We continue to quote No. 1 $28@$29, No. 2 $26@$28, Forge $24@$26.

SCOTCH PIG.—We hear of sales of 400 tons to arrive, on private terms. There are about 1200 tons now on the way here. Prices are drooping. We quote Eglinton $37@$38, Glengarnock, $37@$41, but a concession from these figures is made on iron delivered after the 1st of November. The price of irons in Scotland has fallen during the week from 5/ to 8/ per ton, the latest telegrams giving Coltness and Gartsherrie 110/@112/, Glengarnock 100/.

RAILS.—There have been no transactions during the week, and prices are quite nominal. We quote $55 at the works for iron, and $80 for steel.

OLD RAILS.—No transactions and no inquiry. We quote, nominally, $30@32.

SCRAP.—We quote, nominally, $27@31.

Boston.

From the *Commercial Bulletin* of October 10.

Pig continues to rule very dull, and to show a tendency to drop a dollar a ton on the low quotations that have been current. Within the week 1200 tons pig have been landed at Fisk's Wharf, which has filled all the vacant spaces in and about the shed. This fresh stock coming upon an already overstocked market is an unfortunate occurrence. We quote No. 1 American, $29@31, nominal.

Bar is moving in a very timid way even for the trivial business going. The current rate, 3 cents, has been shaded for three or five hundred pound lots for cash, but this is no encouragement for better trade.

Chicago

Oct. 13, 1874.

Specially reported by Messrs. ROGERS & Co., dealers in Scotch and American pig iron.

Quotations remain as follows:

No. 1 Coltness	$46 00@ ....
No. 1 Gartsherrie	45 00@ ....
No. 1 Summerlee	44 00@ ....
No. 1 Glengarnock	42 00@ ....
No. 1 Eglinton	40 00@ ....
Warner's "American Scotch"	41 00@ ....
Massilon No. 1 Foundry	37 00@ ....
No. 1 Grand Tower Mo. ores (Bituminous)	35 00@ ....
No. 2, " " "	32 00@ ....
No. 1 Mill	31 00@ ....
Union "A" 1 (Anthracite)	34 00@ ....
Union "B" 1 (Anthracite)	32 00@ ....
No. 1 Lake Superior (charcoal)	36 00@ ....
No. 2 Lake Superior "	34 00@ ....
No. 3 Lake Superior "	30 00@ ....
No. 4 Lake Superior "	42 00@ ....
Bessemer Steel Rails	90 00@95 00
New Iron Rails	55 00@ ....
Old Rails	38 00@ ....

Cleveland.

Oct. 13, 1874.

Specially reported by Messrs. C. E. BINGHAM & Co., dealers in pig iron and iron ore

Quotations remain as follows:

No. 1, Anthracite Foundry	$.... @....
No. " "	.... @....
No. 1, Bituminous "	31 00@ ...
No. 2, " "	29 00@....
No. 1, " Gray Forge	27 00@....
No. 1, Massilon Black Band	36 00@....
No. B-1 " "	34 00@....
No. 2 " "	32 00@....
No. 1, Lake Superior Charcoal	33 50@....
No. 2, " "	32 50@....
No. 3, " "	34 50@....
No. 4, " "	37 00@....
Nos. 5 and 6 "	38 00@....
American Scotch, No. 1, Cherry Valley	35 00@....
" " No. 2	32 00@....

Cincinnati.

Oct. 14, 1874.

Specially reported by Messrs. TRABER & AUBERY, commission merchants for the sale of pig iron, blooms, ore, etc.

We have no improvement to note in our Pig Iron Market. The demand is confined to immediate necessities of consumers. Prices are irregular and somewhat lower. We quote:

CHARCOAL.

Hanging Rock, No. 1, Foundry	$32 00@33 00—4 mos
" No. 2, "	30 00@31 00—4 mos
" Mill	27 00@28 00—4 mos
Tennessee No 1, Foundry	31 00@32 00—4 mos
Tennessee. No. 2 "	29 00@30 00—4 mos
" " Mill	27 00@28 00—4 mos
Missouri, No. 1, Foundry	33 00@34 00—4 mos

STONE COAL.

Ohio No. 1, Foundry	30 00@31 00—4 mos
" No. 2, "	29 00@30 00—4 mos
Ohio Mill	27 00@ ....—4 mos
Missouri, No. 1, Foundry	31 00@32 00—4 mos
" No. 2, "	30 00@ ....—4 mos
" Mill	27 00@28 00—4 mos

CAR-WHEEL.

Hanging Rock, C. B.	50 00@55 00—4 mos
Tennessee "	45 00@48 00—4 mos
Missouri "	45 00@48 00—4 mos
Alabama "	45 00@48 00—4 mos

BLOOMS.

Charcoal	80 00@ 90 00—cash

SCRAP IRON.

Cast	75@ 1 00—cash
Wrought	1 25@ 1 50—cash

Indianapolis, Ind.

Oct. 12, 1874.

Specially reported by NELSON KINGMAN, broker and dealer in pig iron, etc.

Continue quotations.

New Rails at mill	$62 00@64 00
Old Rails	30 00@31 00
Hanging Rock Charcoal Pig No. 1 foundry	35 00@36 00—4 mos
" " " 2 "	32 00@33 00—4 mos
" " " Mill	29 00@31 00—4 mos

STONE COAL.

Indiana No. 1 Foundry pig Planet furn'e.	32 00@34 00—4 mos
" 2 " " "	31 00@32 00—4 mos
" 1 Forge " "	29 00@ ....—4 mos
" 2 " " "	27 00@ ....—4 mos
Ohio No. 1 Foundry pig	33 00@34 00—4 mos
" 2 "	31 00@32 00—4 mos
" 1 mill	28 00@30 00—4 mos
Merchant Bar, card rates	60 00@62 00—3 mos
1st quality C. H. No. 1 Boiler Plates, per lb	.5¾@6 c.—3 mos
1st " Com. Sheet, for No. 24, W. G. "	5 c.—3 mos
1st " Charcoal Sheet " " "	6 c.—3 mos
Best Bloom Galvanized Sheet, discount 20 per cent	—cash.
2d quality " " "	30 " —cash.

f. o. b in Indianapolis.

Louisville.

Oct. 13, 1874.

Specially reported by GEORGE H. HULL, Esq.

There is more inquiry for iron but no improvement in prices. The volume of business, however, shows a better feeling among buyers.

The usual time, 4 months, is allowed on the quotations below.

HOT BLAST—CHARCOAL.

No. 1 foundry, from Hanging Rock ores	$30 00@33 00
No. 2 " " "	28 00@29 00
No. 1, forge, " "	26 00@27 00
No. 1, foundry, " Tennessee "	28 00@30 00
No. 2 " " "	27 00@28 00
No. 1, forge, " "	26 00@27 00
No. 1, foundry, " Alabama "	28 00@30 00
No. 1 " " Iron Mountain "	32 00@34 00

HOT BLAST—STONECOAL.

No. 1, foundry, from Missouri ores	30 00@33 00
No. 2, " " "	28 00@29 00
No. 1, forge " "	28 00@30 00

COLD BLAST—CHARCOAL.

Car Wheel from Hanging Rock ores	50 00@54 00
" " Tennessee "	45 00@46 00
" " Alabama "	48 00@50 00
" " Georgia "	48 00@50 00
" " Missouri "	45 00@46 00
" " Kentucky "	45 00@50 00

Milwaukee, Wis.

Oct. 13, 1874.

Specially reported by Messrs. R. P. ELMORE & Co.

Quotations are unchanged.

Per ton of 2,240 lb.

Scotch ranges	$40 00 to $45 00
No. 1, Lake Superior Charcoal	36 00 to 38 00
" 2, " " "	34 00 to 36 00
" 1, " " Anthracite	35 00 to 36 00
" 2, " " "	33 00

Philadelphia.

From our Special Correspondent.

Oct. 15, 1874.

An uncertain feeling still pervades the iron market here; yet it is generally conceded that an improvement in the trad is not far distant, but we cannot trace any tangible reason for

such opinion. We note several transactions, amounting to say 6000 tons of various grades of metal, within the range of our quotations, which price leaves scarcely any margin above the cost. When a revival does come, our utmost producing capacity will be called upon to supply the demand. We quote: No. 1 Foundry, $28@$30, and No. 2, $26 to $28; Rails, $57 to $60. Some 10,000 or 12,000 tons have been sold for Western railroads on private terms. Several transactions in Old Rails have transpired at from $31 to $34.

Pittsburgh, Pa.

October 13, 1874.

Specially reported by A. H. CHILDS, Esq., commission merchant for the sale of pig iron, blooms, ore, &c.:

Trade is quiet, and consumers still adhere closely to the policy of buying only from hand to mouth.

However, they are generally carrying very light stocks, and as these must of necessity be the more frequently replenished there is a pretty steady demand for the best grades of forge iron. Prices are unchanged.

No. 1 Foundry, anthracite or bituminous	$28 00@29 00	4 mos
No. 2. " " "	26 00@27 00	4 mos
Gray forge " "	26 00@26 50	4 mos
White and mottled " "	24 00@25 00	4 mos
Hot blast charcoal	30 00@35 00	4 mos
Cold " "	40 00@50 00	4 mos

From the *American Manufacturer*.

PIG IRON.

WEDNESDAY, Oct. 14, 1874.

There is but little that is really new or important to record in connection with the pig iron trade to which reference has not already been made. Business continues very dull, the demand is still restricted entirely to supplying immediate wants, and while there has been no quotable change in prices since the date of our last review, the general tone and spirit of the market is apparently weakening. Notwithstanding the fact that prices are now, and have been for some time, too low to yield any margin for profit, some well informed operators alleging, that after taking into consideration the reduction in the cost of manufacture, they do not cover actual cost, yet in the face of this buyers continue to take hold very sparingly, and some of them are holding back in anticipation of a still further shrinkage. The outlook, we regret to say, is not favorable for the producing interest; it is not as promising now as it was early in the season, and some of the producers who, a couple or three months since, were holding their product, confident of an advance this fall, are now willing to sell at current rates. However, it is not generally believed that there will be any material change in rates between now and the close of the year, notwithstanding, as we have stated, some few operators, mostly consumers, think differently, and there are furnacemen who still entertain hopes that there will be a change for the better during the time in question, notwithstanding the outlook at present is not very encouraging. While a large percentage of furnaces have blown out, there is no question that the production is still too large, so far as the interests of the producer are concerned, as there is not much hope of an advance in prices as long as stocks are so largely in excess of the demand, as is the case at the present time; the supply in first hands is reported heavy—unusually so—and herein is the weakest point in the situation at this writing. It is the opinion of operators, whose interests are identified with the producer, that there will be no material or decided change for the better this side of January, if then; although it is true the market sometimes takes a kink when it is least expected, and it might do so within the time specified.

Pig metal sales reported for the *American Manufacturer* for the week ended October 14, 1874.

BITUMINOUS COAL SMELTED FROM L. S. ORE.

40 tons	No. 1 foundry	$29	00—4 mos
50 "	No. 1 foundry	28	50—4 mos
50 "	No. 2 foundry	27	00—cash
110 "	No. 2 foundry	27	00—4 mos
100 "	gray forge	26	50—4 mos
240 "	gray forge	26	00—4 mos
100 "	gray forge, medium	25	00—4 mos
50 "	white and mottled	24	00—4 mos

ANTHRACITE.

50 tons	No. 1 foundry	$26	00—cash
50 "	gray forge, C. S	24	00—cash

CHARCOAL.

45 tons	No. 1 foundry, H. B	$35 00@37	00—4 mos
100 "	No. 1 foundry, L. S	34	00—cash
10 "	No. 2 foundry, H. B	34	00—4 mos
55 "	No. 2 foundry, Tenn	30	00—4 mos

COKE.

10 tons	No. 1 foundry	$29	00—cash

MANUFACTURED IRON.

The general position of the market for finished irons remains substantially as it has been for some time past; about the only important feature we have to record is that a feeling of weakness is being developed, and we understand that in some instances concessions have been made recently in order to effect sales. It was hoped that the prices established at the last meeting of the Association would be maintained, as they afforded only a fair margin for profit, and it is very unpleasant and unsatisfactory to do business when there are no established rates, and "cutting" is the order of the day. The fact, however, that concessions are being made is good evidence that business is not very active, that orders are not coming in very freely, and it demonstrates, also, what we have already intimated, that some of our manufacturers are calculating upon a further reduction in the cost of the raw article. However, the mills all appear to be busy, as the most of them are working double turn, and there is little doubt that this will hold out during the balance of the season.

STEEL.

There is a fair degree of activity, the mills are all running, some of them working up to their full capacity, but it is complained that there is no uniformity as regards prices, which, of course, renders business unpleasant, and in not a few instances unsatisfactory. It would be much better for producers if a card could be agreed upon that would afford a fair margin for profit and then adhered to; there would be just as much business, and it would certainly be much more satisfactory, not only for manufacturers, but jobbers and consumers also.

METALS.

NEW YORK, Oct. 16, 1874.

Gold Coin.—During the week past, gold has ranged from 109¾ to 110, and closed yesterday at 110.

Bullion.—Fine silver bar is quoted at $1 25½@$1 26¼, gold, per ounce, and fine gold bar at par ($20 67, gold, per ounce.) to ⅛th discount.

Copper.—The copper market has been quite active for some time past and the sales during the week aggregated between 3,000,000 and 4,000,000 lb., most of which was bought to be delivered from November to March, at 22 cents.

There is little or no speculation in the metal, the sales being mostly confined to consumers. Prices will doubtless advance in sympathy with the foreign market; 22¼ cents is quoted for delivery from Novemver to January, and 23 cents for delivery in January, February, March and April. The foreign market is reported by cable as £83 for Chili Bars, and Best Selected, £92@£93.

Our mail reports to the 2nd October include Messrs. VIVIAN, YOUNGER and BOND'S Circular, from which we quote as follows:

"***Copper.***—All descriptions have been in good demand, and a general advance of about £4 per ton established since a month ago. On Sept. 25th, advices by cable came to hand of charters for the first fortnight of September, representing 1,000 tons fine in the proportion of 800 tons bars and ingots, to 200 tons ores and regulus. There had already been some speculative purchases up to £80 for picked brands of Chili bars, and £79 to £79 10/ for ordinary. This news gave an additional impetus, and with a few sales at £80 to £80 10, the market became firm at £81 to £81 10/, closing buyers at this and little available. The annexed statistics show large deliveries from stock, and with the prospect of smaller supplies from Chili, and no considerable increase from other quarters, some further improvement is looked for. The shipments of Lake Superior to this side up to the end of September are about 3,600 tons, and no further quantities are spoken of as likely to be available for the present. English in good request especially for prompt delivery, up to £87 for tough, and £89 for Best Selected, about £2 advance being now asked. A considerable business has been done in furnace material, part said to be on speculation at from 15/ 9d. to 16/ 6d. per unit, both spot and to arrive. In fine foreign, Wallaroo sold from £88 to £90 10/, £91 being now asked. Burrra from £87 to £89 10/."

According to the Board of Trade Returns for the United Kingdom, the imports and exports of copper during the first eight months of the following years, estimated in fine, were as follows:

IMPORTS.	1874.	1873.
Copper in ores and pyrites	14,482	15,140
Do. Regulus	9,843	9,508
Do. Bars, etc.	27,443	22,606
Tons	51,768	47,254
EXPORTS.		
Manufactured Copper, etc.	15,630	13,088
Unmanufactured do.	7,155	9,321
Foreign do.	16,556	14,208
Tons	39,341	36,617

The Swansea and Liverpool arrivals and deliveries of Chili bars, ores and regulus in fine were as follows during:—

	Sept., 1874.	Sept., 1873.
Arrivals	2,500	2,500
Deliveries	4,750	3,550

The quantity of Chili Bars, Ores and Regulus in stock at, and afloat for, Liverpool, Swansea and Havre, and of English and Foreign Copper in London, is thus estimated in Fine Copper:

	1st October, 1874.	1st October, 1873.
Stock	23,260	27,632
Chili Produce shipping and afloat per Mail advices	7,550	7,850
Total Tons	30 810	35,482

	1st October, 1874.	1st September, 1874.
Stock	23,260	26,726
Chili Produce shipping and afloat per Mail advices	7,550	6,800
Total Tons	30,810	33,526
Chili Produce chartered per available advices up to date	3,100	3,100
Australian Produce afloat	950	950

Quotations of English Tough and Chili Bars, Ores and Regulus, were as follows:

	1st October, 1874.	1st October, 1873.
Tough	£88	£91
Bars	£81	£82 10s.
Ores and Regulus	16s.	16s. 3d.

The actual exports of Bars, Ores and Regulus in Fine Copper from Chili the first seven months of the following years were as under;

1874.	1873.
26,600	24,050

Lead.—The demand is moderate, but prices are firm and advancing. We can quote at 6¼c, gold, for Domestic; 6¾c., gold, for Foreign.

The Government will probably advance its price to 6½c., as there is every prospect of a steady market. The closing of the Spanish source of supply by its absorption by the French and Spanish Governments for military purposes has stiffened the European market. In London, Lead has advanced about 15/ per ton, good English shipping brands selling up to £22 per ton.

Spelter and Zinc.—The market is only moderately active. Some dealers report it very dull. Prices are firm at 6¾c., currency, for Domestic. Foreign is quoted at 6⅝@6¾c., gold.

Tin.—There is little doing. We quote Straits 21¼c.; L. and F., 21¼c; Refined, 21½@¾c. Latetelegrams from London quote Straits, £91; L. and F., £95; Refined, £97.

Our London advices to 2d October are as follows:

During the early part of the month the market was steady at 92/ for Straits, and spot parcels being well held, 93/ to 94/ was paid for small quantities. Prices then became easier and the market quiet pending the Dutch sale, with sales down to 91/ steamer arrival, and 90/ for Australian. On the 29th ult. 22,300 slabs Banca were sold by the Dutch Trading Company at an average of fl 56.80, equal to about 98/ 6d, laid down here. Straits has since sold at 90/ to 90/. 6d. near arrival, and 91/ 6d. to 92/ spot. Australian 89/ to 90/ both for arrival and spot. English has been in fair demand at 95/ to 96/ for common ingot.

The stock of Foreign Tin in London and Holland is thus estimated:

	1st Oct., 1874.	1st Oct., 1873.
Foreign Tin in London	2,658	1,877
Banca Tin in Holland	877	1,387
" " (in Company's hands)	3,980	4,120
Billiton Tin in Holland	1,000	866
	8,515	8,250
Quantity of Straits, Banca and Billiton Tin afloat for Europe	1,300	600
Quotations on the same date being for Straits	£91 10/	£123 10/

Tin Plates.—In better demand, and makers have for some descriptions obtained higher rates.

According to the Board of Trade Returns the exports of Tin Plates during the first eight months of the following years were: in 1874, 78,300; in 1873, 87,300.

Antimony.—The stocks are very light, not exceeding 50 casks, according to some dealers, and prices may be quoted 11¾c., gold, for Foreign and Domestic.

Manganese.—The trade in this useful mineral has this week been quite neglected, and we did not hear of any sales to steel makers or glass manufacturers, but there was a small inquiry from varnish men. Pyrolusite, none here; Manganite, New Brunswick, 3¼c.; Manganite, Georgia, 3c.; Virginia Psilomelan, 2½c.; New Jersey Manganese, 4½c. White borate of manganese is inquired after, and offered for 60c. gold.

We last week spoke of New Jersey manganese, which is a new mineral in this market. We have been informed by the owner of the mine that the ore is found in a true fissure vein about 3 feet thick, and work has now been extended to a depth of 40 feet. The following remarks by Prof. COOK, State Geologist, and JAMES R. THOMPSON & Co., of the New Jersey Steel Works, would indicate that this ore is better adapted to steel manufacture, than our remarks in last week's market report would indicate.

"The vein of oxide of manganese which you are working at Clinton, Hunterdon County, yields an ore which I think is valuable for use in steel making, and I would recommend you to bring it to the notice of manufacturers of that metal.

"The ore, though chiefly oxide of manganese, is not quite all in the highest state of oxidation, so that it seems better adapted to use for the manganese it contains than for the oxygen. Its use in making steel is of the former kind, and I have no doubt the manufacturers who try it in any of the ways followed in making steel, will find it useful and valuable, and I would have no hesitation in substituting it in place of any of the varying, but high priced articles, which are in use.

"GEORGE H. COOK."

"JERSEY CITY, August 8th, 1874.

"We have used manganese sent us by H. W. MERRILL, and find that it works as well as any we have ever used, and would recommend same to steel manufacturers.

"JAS. R. THOMPSON, & Co."

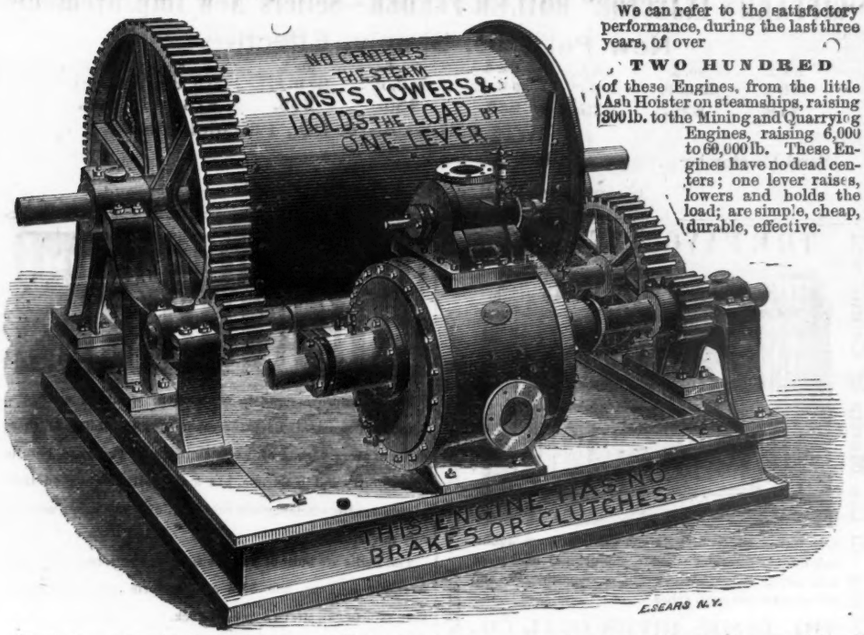
Quicksilver.—The price at San Francisco is quoted at $1 50. In London, it is quoted £24 per flask (75 lb.) The New York market is a very limited one, and it may be quoted at $1 60@1 65.

Miscellaneous Stocks.

NEW YORK, Oct. 16, 1874.

We have but little of interest to note with regard to the following list. The quotations, with but a few unimportant exceptions, are scarcely altered from our last. The tendency during the week has been downward. The markets, how-

ROTARY REVERSIBLE HOISTING ENGINES.



We can refer to the satisfactory performance, during the last three years, of over

TWO HUNDRED

of these Engines, from the little Ash Hoister on steamships, raising 300 lb. to the Mining and Quarrying Engines, raising 6,000 to 60,000 lb. These Engines have no dead centers; one lever raises, lowers and holds the load; are simple, cheap, durable, effective.

We ask those looking for Hoisting Engines, and Mining Machinery to consult either of the following references: Eckley B. Coxe, Proprietor of Cross Creek Collieries, and Vice-Prest. of the Am. Inst. of Mining Engineers, Jeddo, Luzerne Co., Pa; J. H. Lyon, Pres't. Straitsville Coal Mines, Office 115 Broadway, New York; Geo. E. Hall, Pres't. Central Vermont Marble Co., Post Office Cleveland, Ohio; Ingersoll Rock Drill Co, No, 5 Park Place, New York; Gilbert Fowler, Chief Engineer Pacific Mail Steamship Co., Pier 42 North River, N. Y.; S. F. Shortland & Bro., Steam Lighters, 106 Wall st., New York; Divine Burtis, Jr., Contractor, Brooklyn, N. Y.; Wm. A. Lighthall. Consulting Engineer, Office 5 Bowling Green, N. Y.; Erastus W. Smith, Consulting Engineer, Office 42 Dominick st., New York. Every Engine fully warranted. Made only by

LIDGERWOOD MANUFACTURING CO.,
165 Pearl Street, New York.

SEND FOR CIRCULAR.

ever, yesterday partially recovered, and closed steady at both Boards.

	Bid.	Asked.
New Jersey Central R. R. Co	103¾	104
American Coal Co	—	57
Maryland Coal Co	—	18
Pennsylvania Coal Co	245	250
Quicksilver Mining Co	30	30¾
Reading R. R. Co	53¾	54
Delaware and Hudson Canal Co	116	—
Lehigh Coal and Navigation Co	46½	46⅝
Lehigh Valley R. R. Co	61⅛	61¼
Catawissa Preferred	42⅞	43¼
Delaware, Lackawanna & West. R.R.Co.	107	107⅜
Consolidated Coal Co	45⅜	46⅛
Little Schuylkill R. R.	47	48
Huntington & Broad Top R. R. prefrd..	12	13½
St. Louis & Iron Mountain	—	16
Morris Canal Preferred	120	126
Susquehanna Canal	6	10

San Francisco Stock Market.

BY TELEGRAPH.

NEW YORK, October 15, 1874.

We have advices from the San Francisco Stock Board dated the 18th inst. A slight decline is noticeable in Belcher and Raymond and Ely, these are the only exceptions to an advance of the list. The market has been very active during the operations of the week. An assessment of $5 per share has been levied by the Hale and Norcross Mining Co., delinquent Oct. 13. Our quotation of this company, on the 1st inst., places it at $48½ per share.

Savage	93	Imperial	11
Crown Point	56	Raymond & Ely	16
Yellow Jacket	117	Meadow Valley	6¾
Kentuck	23	Eureka G. V. Bld	8
Chollar Potosi	73	Ophir	—
Gould & Curry	29	Hale & Norcross	—
Belcher	66	Consolidated Virginia	98

Boston Stock Market.

BOSTON, October 15, 1874.

The condition of the following list of copper stocks exhibits but slight changes as compared with our last. The market is irregular and transactions limited. The sales yesterday were comprised in a transfer of 25 shares of Quincy at $35.25 per share, and also 100 shares of Allouez at $6 per share.

Allouez	5¾	Pewabic	—
Calumet and Hecla Co.	137	Phœnix	—
Copper Falls	10	Quincy	35
Central	—	Ridge	5
Franklin	—	Rockland	—

American Institute of Mining Engineers.

OFFICIAL BULLETIN.

Announcements to Members and Associates.

I. The ENGINEERING AND MINING JOURNAL, which is the Organ of the Institute, and contains its proceedings, transactions and notices of meetings, will be sent to each Member and Associate on the payment of his annual dues. Back numbers cannot, as a rule, be sent.

II. Dues (ten dollars per annum) are payable on election and at the annual (May) meeting. Members and associates elected at the February meeting pay ten dollars only to May of the following year. Remittances should be made, as far as possible, by P. O. Order, payable to the Secretary.

III. The Council earnestly requests members to forward to the Secretary, for preservation, copies of all printed mining and geological reports, particularly pamphlets, which may fall in their way. It is believed that by this means a large amount of valuable fugitive information concerning different regions and properties in this country, may be caught and preserved.

IV. The October meeting of the Institute will be held at Hazleton, Pa., beginning Tuesday evening, 27th inst. The following members of the Institute compose the local Committe, of Arrangements: Messrs. E. B. COXE, Drifton; T. S. MCNAIR, Hazleton; and W. J. HARRIS, Ebervale. Members are requested to give the Secretary the titles of their papers in advance of the meeting if possible.

THOMAS M. DROWN, Secretary, Lafayette College. Easton, Pa.

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BOILER PLATES, BOILER TUBES
STRIP PLATES, SPECIALS.
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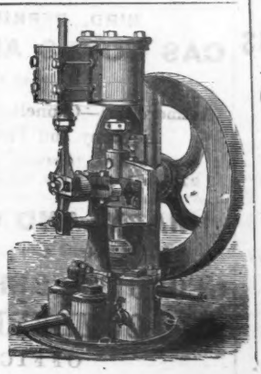

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One Grand Cash Gift		25,000
5 Cash Gifts,	$20,000 each	100,000
10 Cash Gifts,	14,000 each	140,000
15 Cash Gifts,	10,000 each	150,000
20 Cash Gifts,	5,000 each	100,000
25 Cash Gifts,	4,000 each	100,000
30 Cash Gifts,	3,000 each	90,000
50 Cash Gifts,	2,000 each	100,000
100 Cash Gifts,	1,000 each	100,000
240 Cash Gifts,	500 each	120,000
500 Cash Gifts,	100 each	50,000
19,000 Cash Gifts,	50 each	950,000
Grand Total 20,000 Gifts, all cash		2,500,000

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Analysis of Average New Bed Pure Ore.		*Analysis of No. 1 Bessemer Pig.*	
Metallic iron	68. 24	Undetermined matter and loss	.134
Oxygen with the iron	26. 01	Silicon	1.019
Water	. 38	Carbon	3.821
Insoluble Siliceous matter	4. 32	Phosphorus	.048
Sulphur practically	none.	Sulphur practically	none.
Phosphorus	.038	Calcium	.140
Alumina	.28	Metallic iron	94.838
Lime	.14		100.000
Undetermined matter and loss	.592		
	100.000		

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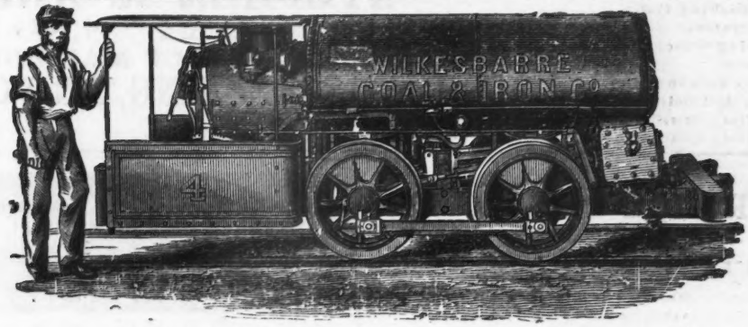

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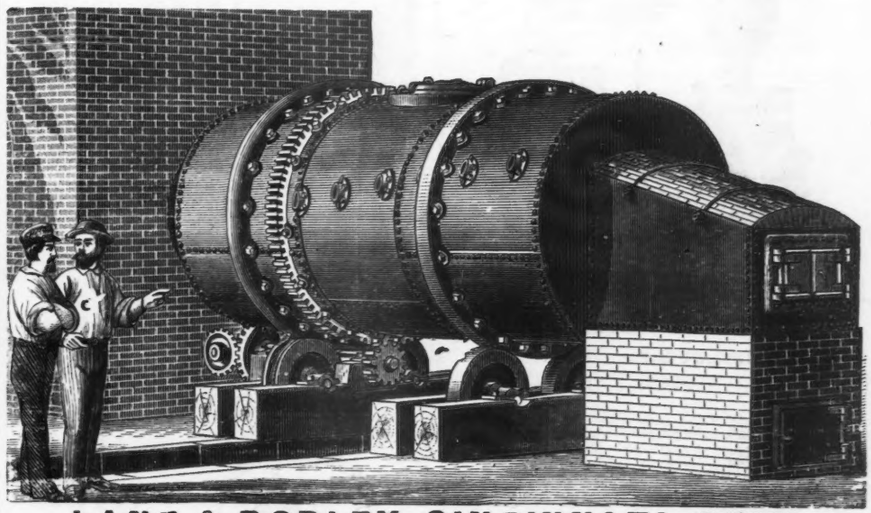

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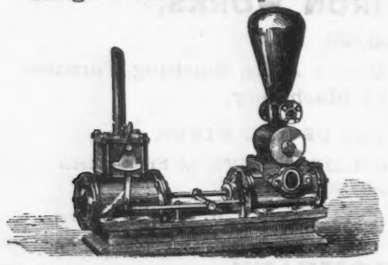

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PAT. AUG. 2, 1870. DECEMBER 20, 1870
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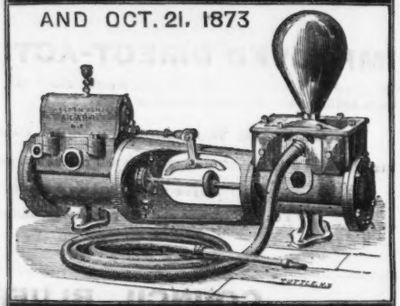

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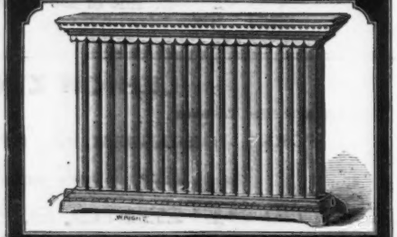

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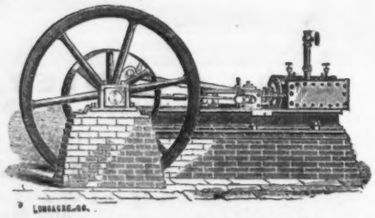

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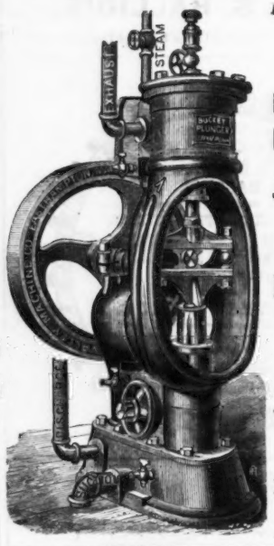

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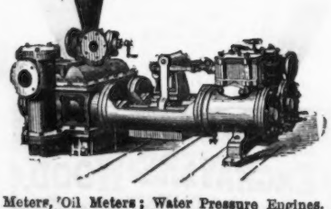

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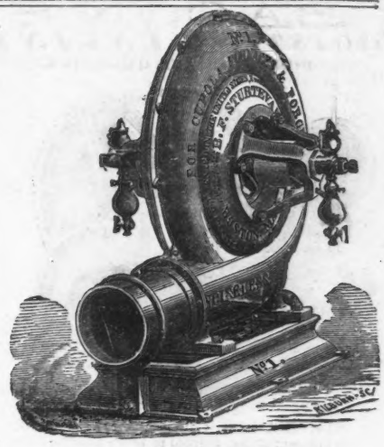

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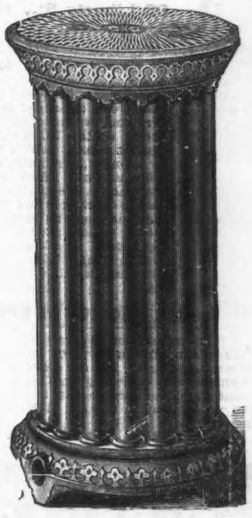

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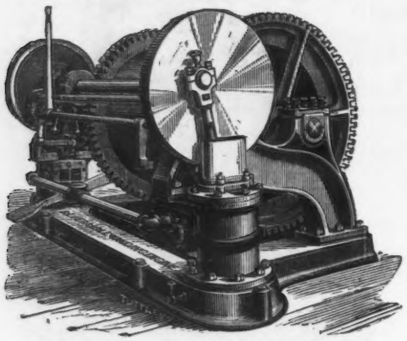

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☞ Look at following extract, Ingersoll Co.'s letter of excuses, ENGINEERING AND MINING JOURNAL, June 6, and compare with their advertisement: "I had *two* drills at the mine from the commencement, one beginning work on the 4th of April, the other on the 7th of the same month, and both drills working until the 1st of May." Signed, C. N. ELLIOTT, Superintendent Ingersoll Rock Drill Co.
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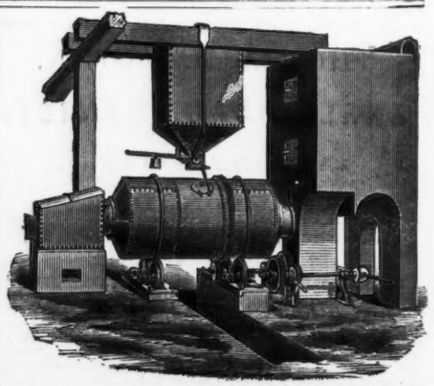

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